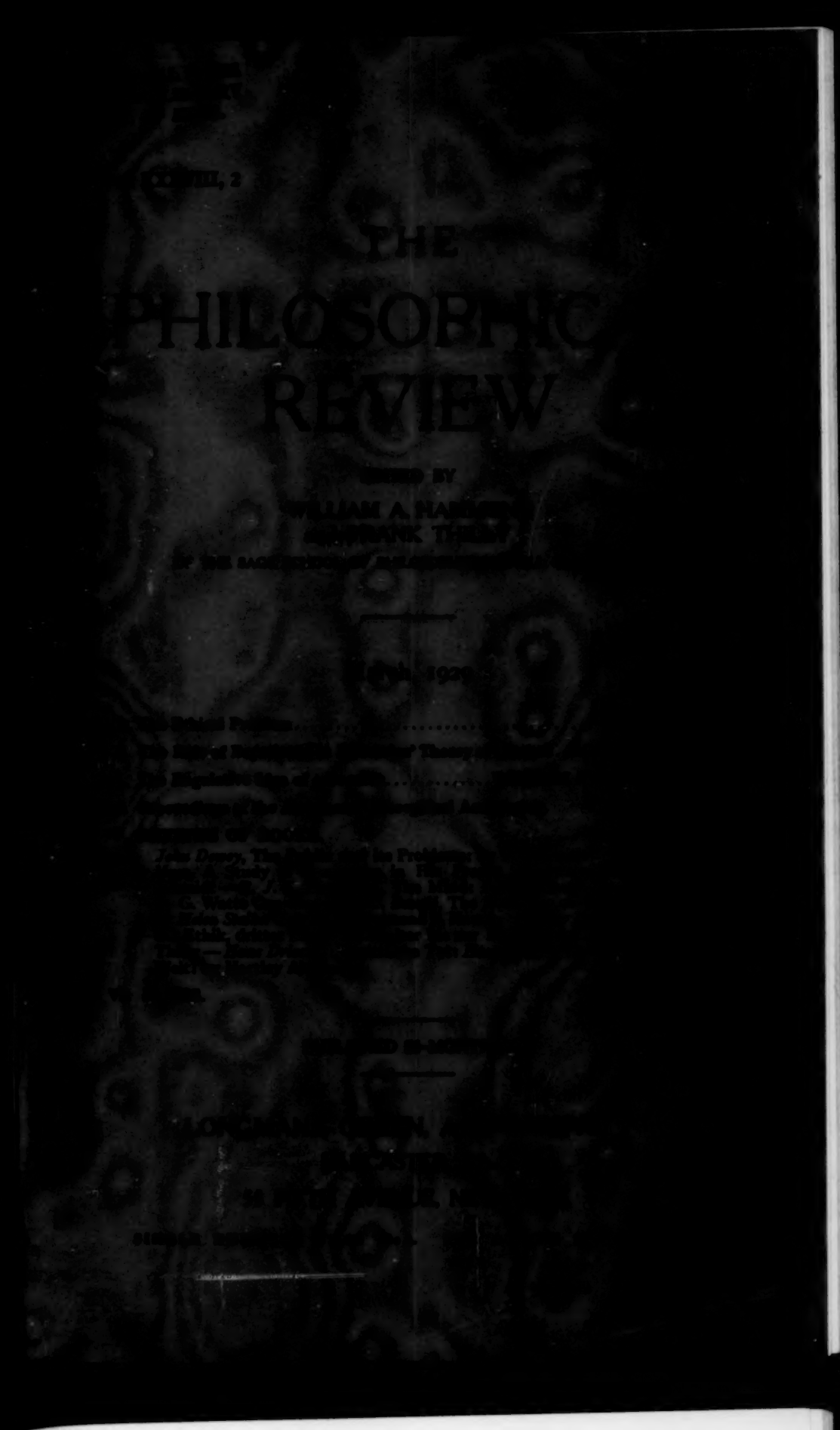

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THE PHILOSOPHICAL REVIEW.

THE ETHICAL PROBLEM.[1]

TO communicate thought as it lies in the mind of the thinker to other minds is proverbially difficult. The difficulty is increased if the ideas to be communicated are heterodox in the sense of diverging from lines commonly followed. In that case, the person who delivers an address on a philosophical subject is likely to meet with an attitude of suspicion if not of active hostility on the part of his hearers. The thought he strives to present is an unwelcome guest, like some belated traveler who on arriving at an inn is told that the rooms are already occupied, and is admitted reluctantly if at all.

Among philosophers, however, one ought to be able to count on a more generous hospitality. At any rate I plead that a chamber in your minds be assigned to the guest thought I am introducing to you, that this chamber be cleared for the time being of any adverse occupants that may be in possession of it, and more especially I earnestly request that the argument I am presenting be considered *en bloc,* in all its length and breadth, and that your salutary criticism be deferred until it has thus been provisionally received.

To prevent possible misunderstanding of my purpose I state the Ethical Problem, as I see it, to be that of reconciling the spiritual equality of man with the inequalities that exist in human society. Further, that a ' solution ' of the problem does not mean a panacea or a recipe, by which an ideal state of society shall be created out of hand, but a line of development along which society may gradually advance in the direction of the Ideal.

[1] The President's Address to the Eastern Division of the American Philosophical Association, December 29, 1928, at Philadelphia.

But to proceed, Ethics has been the Cinderella of the sciences. Ethics has been the pensioner of the other sciences, borrowing its first principles from them—from logic, for instance, I refer to the representations of the ethical institutions of mankind as footsteps of the Absolute, vestigia of its march through time; from physics, I refer to the Kantian principle of bare universality and necessity abstracted by him from the determinate uniformities with which physics deals, and then imposed on the contingencies of human intercourse, the pale skeleton leaves, as it were, of the wreath of the sciences being offered by him to ethics as a crown. Ethics has borrowed in more recent times from biology, from psychology, not to speak of its ancient borrowings from theology or divine revelation. It always was the poor relation,—the place assigned to it was a corner in the banquet hall where the other disciplines were feasting. The ethical department of philosophy was treated as an adjunct, a corollary, of theories which had their foundation in facts and reflections distinctive of other fields of knowledge.

And yet the field of human conduct with which ethics is concerned discloses itself on careful examination as sharply distinctive, peculiar, and requiring to be investigated on its own ground, before theories are erected upon it, and especially before speculations that have arisen in other fields are superinduced upon it. Undoubtedly the mind cannot be departmentalized, the fragments of truth discovered in one field must in the long run cohere with those found elsewhere. In the long run, yes, but in the meantime each of the great human interests, science, art and ethics, should be studied in its own precinct before a general synthesis is attempted.

My first point, therefore, concerns the question: what really are the distinctive features that characterize ethical experience and in so far separate it from other types of experience? Of these features, I omit conscience, freewill and the like, and confine myself to those that bear upon my subject as announced—The Ethical Problem.

Ethics is concerned with the regulation of human relationships. The principles which have governed the regulation have been in a large way either naturalistic or spiritualistic—blendings of the two being, of course, included. The common source of both principles is a tendency in man to regard some kind of excellence as peculiar

to man, as most honorable to man, as expressive of what is most admirable in man. When this excellence is apprehended in some natural quality, the system of human relationships founded on it becomes what I shall call a vertical system, in contrast to the horizontal system which is founded on a spiritual excellence. I shall explain the two terms as I proceed.

The vertical system is characterized by a hierarchical arrangement of men. Those who possess the cherished excellence in a pre-eminent degree occupy the highest rank; those who manifest it in a lesser degree are subordinated; those in whom it does not seem present at all are at the bottom of the scale, are practically considered as nonhuman or slaves.

In Egypt, in Persia, the supreme excellence has been regarded as irresistible power, power exclusively vested in a single human being, the king, since he is deemed the incarnation or the offspring of the sun or of some other god whose chief attribute is supreme power. Hence the vertical system has only one person at its apex, all others being subject to him.

In the sacerdotal system the priests have occupied the highest place, because by their prayers and spells and incantations they control the invisible agencies.

In feudalism the military class ranks highest, since the courage, the skill, even the hauteur of the aristocrats, is the excellence most admired. In Plato's *Republic* the philosophers occupy the highest rank,—those beholders of the sublime world of ideas who descend so reluctantly into the cave, the exercise of the intellectual faculty being pronounced by the intellectualists the highest excellence of man. And as a modern parallel to Plato's construction, Ernest Renan in his *Caliban* assigns to the scientists and artists the pre-eminent rank, and would have the vulgar masses subservient to them. Finally, in our own American plan of human relationship, governed as it is largely by economic considerations (and no one will deny that it is largely governed by them), initiative in the effort to attain material wealth and prestige is regarded as the outstanding excellent quality in men. And wealth and prestige being the measure of success, those who are devoid of or deficient in the kind of initiative described are asked to be content with lower places in the social scale. Needless to say that the picture I have

presented requires many qualifications. Human conduct is never determined by a single principle, there are numerous currents and cross-currents from other sources that meet and conflict. What I have attempted is to give a rough account of the bare naturalistic point of view, as isolated from other impinging forces, and as one of the large predominant influences that have been operating in human affairs. That it has prevailed, that it still prevails, there can be no question. The contempt frequently expressed for the colored races, the ruthlessness with which backward peoples have been subjected to the avarice of the so-called more civilized, the persistence even of slavery in forms thinly disguised, bear incontrovertible testimony to what is here said. So long as the vertical system obtains what I have called the ethical problem does not arise. It rises contemporaneously with the spiritual system.

A vertical system can also be constructed, however, on the basis of a kind of transcendental mysticism. In this the relation considered is not that of one finite being to other finite beings, but that of the finite to the Infinite. And a hierarchical arrangement is in this case furnished by illicitly introducing the notions of approximation and participation. A finite being is said to be higher in the scale if he approaches nearer to the infinite, or he is regarded (*cf.*, Dante in the *Paradiso*) as having a capacity to receive and contain more or less of the infinite. But both these notions are images drawn from within finite experience and cannot properly be used with respect to the relation of the finite to the infinite. Approximation is a spatial image, connoting the lessening of distance, and participation connotes capacity or volume. But as the infinite does not exist in space, nearness or farness are meaningless with regard to it. When a finite being is said to approach the infinite, he is as far from it as the most remote of his fellows. And in like manner the notion of participation or capacity is irrelevant. The neo-Platonists speak of perfection as overflowing its borders and pouring into the finite, where it is received according to the greater or lesser capacity of the finite to contain it. But perfection does not overflow its borders, it is self-enclosed. Systems based on the relation of the finite to the infinite, though sometimes called spiritual, as neo-Platonism, Brahminism, the Kaballah with its Sephiroth, for the reason stated are rather to be classed as mixed systems; if spiritual at all they are alloyed with naturalism.

The genuinely spiritual system has this for its hallmark. It discards the hierarchical arrangement. It sees the distinctive excellence of human nature not in any of the natural faculties, not even in the intellect, or in the æsthetic faculty, but in something in man which is not a product of nature. And because this excellence, actual or potential, exists irrespective of the place assigned to man on the vertical scale, therefore actually or potentially it is affirmed to exist alike in all men. And on this account I call the spiritual plan a horizontal plan, all men being spiritually on the same plane.

The spiritual ideal began its course as a conscious force in human history in Hebraism and Christianity. What in the Hebrew and Christian teachings is meant by the spiritual part? In the Hebrew account the spiritual part is the holy thing in man, *holy* meaning that awe-inspiring thing which may not be violated, and which, as being present in one's fellows, furnishes the ground on which the duty of respecting their rights, or justice, is based, injustice being a violation of that which ought to be held inviolable. In the Christian account the spiritual part is the pure thing in man, that which draws away from adulterating mixture, from whatsoever is defiling, that which would pass through the world unstained of the world.

It is true the universalism of both religions had its limitations. In the Hebrew religion priority was assigned to the elect, to the people chosen because they were supposed to be choice, that is to say more deeply penetrated than others by spiritual consciousness, more disposed toward obedience to that categorical imperative that issued from the Eternal, that thrust upon the human will which impels it toward conformity with the eternal will.

In Christianity the universalism was limited to fellow-believers, that is, to those in whom the spark of the Infinite had not utterly died out, and was still capable of being stirred into flame,—the believers being those who, when the Infinite appeared in human form were still capable of being attracted to it like the iron filings to a magnet.

Here I have reached the point where it is possible to define the ethical problem. It is that of reconciling the vertical and the horizontal systems, of harmonizing the spiritual equality of men

with those inequalities that exist under every social arrangement which has yet been tried, even within the Hebrew and Christian limitations of universalism. Even within that narrowed circumscription the ethical problem obtains, stands out in all its vast dimensions, with all its perplexities. For to those who take the spiritual view at all events ethics means the expression of the spiritual equality in the actual facts of life.

To the question of how to reconcile the two systems, the inequalities and the equality, there may be the following answers: the one to force equality on the actually existing inequalities; the second to abolish human society with all its inequalities, the third a compromise, and lastly to work out spiritual equality not despite of but with the aid of existing inequalities. The first method was attempted by the Hebrew legislator in the ordinance of the Jubilee, which perhaps was never carried out in practice. It involved the idea of the perpetual nonalienation of landed property of all the families in Israel, a device suited, if at all, to an agricultural community, at a stage in which industrial development has not yet taken place.

The second method, the abolition of human society, was envisaged in the early apocalyptic period of Christianity. The fashion of this world was to pass away utterly, and another order purely spiritual was to take its place.

The method of compromise followed. All the social inequalities were left intact—that of rulers and subjects, that of barons and vassals with serfage at the base. The impregnable fortress of feudalism, indeed, was left standing despite Christian teaching, until ruined by natural forces, such as gunpowder and the employment of mercenaries. Militarism, after having been temporarily harnessed to the church ideal by the formation of the order of Templars and the others, was left to follow its destructive course. The distinctions of wealth and poverty were even sanctioned with weak counsels of perfection as to the so-called stewardship of wealth. And what became of the spiritual equality of man? It was postponed to the other world, *ad kalendas Graecas*.

The attempt to harmonize the two systems, the horizontal and the vertical, as undertaken by those who held to the spiritual view, therefore, had so far failed.

Then there came a new turn. Socialism entered on the scene, acquiring in Marxism its most precise expression. The notion of man's relation to the infinite was brushed aside as mere ideology. The existence in all men of some surprising excellence irrespective of natural differences, serving as the foundation of the claim for equality, was dismissed as a fable. But at the same time the claim for equality itself was sharply accentuated as never before. On what basis equality according to socialism? According to socialism the demand for equality is based on natural desire, on the desire of everyone for the necessaries, for pleasure, for the things that not only make existence endurable but joyous, the intellectual and æsthetic satisfactions included. In the past the multitude was kept down. The power of the privileged classes has weakened, the majority rise up and insist on having what has hitherto been denied them,—the mass realizing also for the first time the irresistible force that is lodged in it when in action. The class war was devised in order to sharpen desire and to bring it to the point of action by sharpening antagonisms. Now I am not discussing an economic problem but an ethical problem. I am convinced that despite the Marxian materialism and the economic interpretation of history, the demand for equality, even as voiced by the strictest socialistic school, has in it an unconscious echo of the spiritual nature and its claim to be honored. But, however that may be, and aside from all the questions that touch the practicability of socialism, of the sacrifice, for instance, of personal liberty that may be involved, the question which I ask of socialism is whether it solves the problem of harmonizing the horizontal and the vertical schemes, of expressing the equality of all human beings in the actual facts of life, and I cannot convince myself that it does. Assuming that it had completely succeeded, it would then have abolished one kind of inequality, the inequality of riches, but would have left untouched the ineradicable native differences—in ability, in mental range—that subsist among men. It is not possible really to abolish such differences as that of sex, although there is at present a tendency to minimize that difference. It is not possible by any pedagogical device to give to an unmusical person, eminent as he may be in his field, the ability to appreciate a fine piece of music. It is not possible to make a mathematical

physicist of the scholars in our schools whom it is a mercy to exempt from mathematical teaching after the eighth grade. And when the external distinctions disappear, the intrinsic differences will probably be felt more keenly than they are now. By standardizing external differences one cannot standardize brains. There will continue to be those who are competent to perform the inferior functions, inferior in the sense of requiring a comparatively lesser degree of natural endowment, and on the other hand those who are competent to perform the superior functions. I use the terms superior and inferior with reference to the vertical scale, and the problem as I see it can now be explicitly defined as that of vindicating the spiritual equality of those who perform the lesser functions with those who perform superior functions.

How far then have we traveled? Where have we arrived? The spokesmen of the spiritual view have failed to solve the problem, though they have left in the world the precious consciousness of the problem, and among thousands of noble natures the anxious wish to solve it. Socialism on its part in my view as stated must also fail.

The fact that men as a rule do not complain that they are less gifted than others, and therefore have a smaller measure, if any, of the satisfactions that depend on those gifts, is due partly to habit, partly to their thinking of themselves as only products of nature, and of their gifts as accidents of nature, the more or less of which it is not in the range of human power to greatly alter.

It remains therefore for those who hold to the spiritual view to consider whether the received conception itself of the spiritual part of man may not be at fault, whether it may not need to be revised in order that the attempt to advance the solution of the problem shall meet with a brighter hope of success. A revision is necessary, I submit, along the following lines. The spiritual part has been defined in a general way as the consciousness in man of his kinship with the infinite, of his striving towards union with the Infinite. But the Infinite (I am speaking, of course, of the ethical, and not the mathematical Infinite), has thus far been envisaged exclusively as the One, as the Supreme One, as the enshrinement of unity, of ultimate unity. This concept corresponds to the urge in man to unify himself, to escape from the cross-currents of his

inner life, the distractions that drive him in different directions, the manifold unconnected interests, as well as to escape from the downward pull of the lower appetites. The Supreme One is the ideal focus in which the individual seeks his own integrality, his self-realization in that sense. But unity is only one pole of an adequate spiritual ideal. Plurality must be acknowledged, as it has not hitherto adequately been, as on a par with unity. And plurality, not as the indiscriminate many opposed to the One, but rather as a qualitatively differentiated manifold. Neither Monism nor Pluralism each taken by itself can avail. The manifold cannot be derived from the One. If we think strictly, A can never be non-A. The One can never by any logical sleight of hand pass into or lapse into difference. The device of pantheism whereby the differentiæ of the universe are presented as so many masks of the One does not account for the existence of the masks, and at the same time leaves the differentiæ without honor, centers reality exclusively in the one face behind the mask. Nor yet can unity be extracted from the differences. The concepts of unity and plurality, therefore, as I have elsewhere put it, should be considered as two blades of a pair of shears to be used jointly, the emphasis being on the jointness, the One and the Many two inseparable aspects of the same object.

The spiritual ideal is the ideal of the ultimate reality in things. If then this ideal be so revised that the infinite with which man feels kinship is not an infinite One, but an infinite society of reals, of which each is differentiated from the rest, irreducibly unique, then man in the spiritual part of him is to be postulated as one of these unique reals, one of an infinite spiritual company, one of the eternal entities of which each is indispensable in order to establish the plenitude, the totality of being.

From the monistic point of view man is spiritually superfluous, an imperfect image of the Supreme One that sums up all perfection, or a soul to be saved, that is, added to the celestial environment of the perfect being. From the point of view just described, the spiritual, the eternal part of man is a component of the infinite society, has its station within the circle of godhead, if I may use this term in a socialized sense, not a creature of God, but a constituent of God. He has as such an absolute value beyond human

society, and only on this account has he objective value within human society.

I must here introduce a few remarks as to the signification of the term objective value. Value belongs to that which satisfies a want. Water has value to the thirsty, a luscious fruit has value to him who tastes its juice. Man has value for himself in so far as his organs, his faculties, are means of satisfying his wants. Men have value for one another because loneliness is painful, and because the services of others satisfy wants. Objective values might therefore be apparently distinguished from subjective as appertaining to public as distinct from private sources of satisfaction, to those which are appreciated by the generality of men as distinct from idiosyncrasies (or singularities) of appreciation by individuals.

But this conception of objective value would leave uncovered that spiritual excellence of man which is the cornerstone of the spiritual system. There may be a difference in degree, there would not be in kind between such general values as food, tools, musical instruments, the implements of war, and on the other hand the peculiar ethical value which is ascribed to man. The notion of objective value as identical with public value is inadequate. It does not suffice to prohibit the killing of our fellowmen or the oppression of our fellows, except on far-fetched grounds of sympathy, and sympathy itself is a natural disposition which exists in some and is weak in others. In order, therefore, to rescue the spiritual pre-eminence of man, Kant declared that man has objective value in the sense that he is an end *per se*, that he has worth on his own account, that he is never to be treated merely as a means to the ends of others. He is a noumenon, says Kant, that appears in the phenomenal world. All those values which the empirical theories of ethics deal with are transient values, suited to a transient organism, whether to the individual or to the human race—which is also a transient phenomenon in this vast world, a procession of phantoms that pass across the scene and disappear. Objective value means value that is not transient, value ascribed to man as an eternal being (value rooted in the noumenal reality of things).

But there is a fatal gap in Kant's definition. He projects his

noumena, as it were, into the void. He declares them to be objects, he does not assure to these transcendental objects value. For value implies enjoyment by others, satisfying the wants of others, and Kant expressly denies that there can be any spiritual service to others. Every individual must achieve his ethical character, he thinks, by imparting to his acts the dignity to be derived from their being performed as exemplifications of the law of universality and necessity. There can be no ethical influence of a man upon his fellows. Hence in practice the categorical imperative comes to mean respect for certain fundamental rights, as of life, property and reputation, and uniformity of behavior in all those relations in which uniform conduct is feasible.

Kant declares that men are not to be treated merely as means to others' ends, but the word 'merely' is the Achilles' heel of the definition. True, not merely, not without respect for fundamental rights, but nevertheless, it is obvious that men are means to each other's ends, must render services to each other (the doctor, for instance, and the jurist, to choose at random), and the principle on which these unlike services are to be regulated Kant fails to explain, or rather, when pushed to the wall, he becomes inconsistent, falling back on the happiness principle, which is alien to his system.

Can the spiritual ideal of unified plurality come to our aid? Can it bear the crucial test of reconciling the horizontal and the vertical systems? And as a preliminary step, can it reconcile the notions of object and value?

Man is spiritually a monad, one of the ultimate, irreducible reals in the infinite company of reals,—is a monad, not windowless, like that of Leibniz, but with windows open on every side, with channels of influence that run in every direction. He is an object because indispensable in the totality. His essence (or substance) is uncognizable but manifested in the specific energy that is expended by him.

The system of the infinite life is dynamic, not static. The diverse specific energies of his spiritual fellows impinging upon a man evoke from him a specific energy of his own, which in turn emanates from him towards every quarter. The impact of all the rest establishes incessantly the uniqueness of each, while each

contributes from his station in the infinite system to establish the multiform uniquenesses of the rest.

The joint use of plurality and unity, the concept or ideal of unified plurality applied to the infinite society of spiritual beings, is thinkable in no other way. If the integrality of the self, the *per se* character, is to be preserved, and on the other hand if there is to be relationship, value for others, this combination cannot be apprehended by the mind otherwise than as an eternally reciprocal intercourse, a ceaseless, non-temporal action and reaction, flux and reflux of endless diverse energies, the interactions constituting the unity of the whole.

In the vertical or natural arrangement, the differences, though persistent, are transient, since the human race regarded as a product of nature is transient. The point of emphasis in the view I am presenting is that the differences in the spiritual natures are absolute, since difference is a factor as indispensable in the constitution of reality as oneness. The differences are founded in the nature of things, and their coherence into a system is achieved by establishing a genuinely organic connection between them—the idea of organism being that of a system of parts or members, of functions and functionaries, of which each one is indispensable to the whole, each serving to promote the functions of the rest, an idea as fundamental in our mental constitution as that of causality, though of course not to be found realized in what in a degraded sense are commonly called organisms,—animals or the quasi-social organisms of human society. The idea of organism is a spiritual idea and in that sense only I use the word 'organic.'[2]

Now the organic ideal as I shall now call it has direct bearings upon the ethical problem which I am discussing. One of its immediate corollaries is that in considering the so-called horizontal arrangement we must substitute equivalence for equality—equal value of functions, inasmuch as each function and each functionary is indispensable, instead of equality in the sense of sameness.

Our metaphysical constructions are not spiritually estimable

[2] The constant degradation of words appropriate to lofty ideas by vulgar applications is also seen in the now common use of 'organization' for the merely mechanical reglementation of masses, as in the case of 'labor organizations' and the like.

unless they are useful, unless they serve to guide men in straightening out their twisted relations to each other and forming human society on a nobler model. There is therefore one consequence of the revision of the spiritual ideal which I have here sketched that I should like to point out to your particular attention. It is this: that the morality of groups becomes an object of spiritual construction as it has not been before,—the morality of the individual with reference to his group and the morality of groups in their relations to each other.

Owing to the predilection for unity, and the sort of shying at plurality as a disturbing, unwelcome aspect, a predilection which runs through the principal philosophies and religions of the past (the accent being always on the One), it became a habit to think of ethical conduct chiefly as the conduct of one to one, of individual to individual; but the conflict of the social groups, the wars of people with people, and more recently the mutual seditions of the sexes, loudly proclaim the urgency of developing a morality of groups. The organic ideal in its spiritual sense, I affirm, is competent to create or produce a morality of groups. But how is this to be understood? What is the relation between a group such as the family, the vocation, etc., and the spiritual organic ideal? The group is the empirical substratum of the organic ideal. It is the soil in which the ideal gets a footing. It is the matrix, the *ekmageion,* in which the organic ideal itself develops. The spiritual, organic ideal does not descend from above, it is worked out from beneath, from within, the experience of men in human society.

Just as the ideal of perfection as the Supreme One, the Eternal God ideal, had its footing, its empirical substratum, in the individual's urge to unify his own self, to attain to integrality, so the social ideal of perfection has its actual footing in the social groups.

The groups already existing fulfill to a very limited extent the conditions described by the organic ideal. There are the differences of sex, of types of mentality, of aptitudes, and in accordance with these differences the members of the group are required to perform different functions. Every such group already is a system of mutual interdependency. The group is already as it were partially organized, but most imperfectly, with deep maladjust-

ments, with the clashing of minds and wills. To apply the spiritual rule then means to go on organizing the group, and this again means to so influence the individuals that each shall present to himself a picture of how the fellow members of his group might perform their respective functions in the best possible way, surrounding himself, as it were, with spiritual images, ideal images of his fellow functionaries, and then so taking hold of himself, changing himself, transforming himself, as to perform his own function in such fashion as to call out the best performance by each of those others. To illustrate, I take the family. The family is at present being disintegrated by the one to one formula, the equality notion. Apply instead the notion of equivalence, as rooted in indispensable functions. The family is not an aggregate, but a group. It is the nuclear group that expands into the others. The relation between the two sexes is not a side by side relation, as in friendship or comradeship. Friendship undoubtedly there should be between the spouses, and the joyous sense of comradeship. But conjugality is more than friendship and comradeship. It is a union of two lives from which issue other lives, those other lives representing the future generations. The future generations are present in the family in the persons of the offspring. The conjugal relation is orientated towards the more perfect, the less imperfect, life of humanity that is to be. But in order that the union of spouses may lead to this thrust forward in the lives of their offspring, their union must be a spiritual union—and spiritual implies, as I have said, the formation in the mind of each partner of an image of the other as performing his or her function in the most excellent way—the most excellent being that which provokes a correlative unlike excellence in the other partner.

The question what this excellence is (for instance, in woman, what the specific function is to be exercised as regards the partner and the offspring) is no longer a merely ethical question. The eternal real, the unique monad, which is the spiritual part of the woman as of the man, is without cognizable content. What is knowable about it is the plan of relations in which it is included, its generative relations. To apply this ideal plan in practical conduct the notion of a spiritual real must receive empirical content. The spiritual character has for the material in which it seeks to

realize itself an empirical character. The image of the ideal woman is that of the woman as she is actually known, placed in such relations with members of the family group as to generate the ideal performance of diverse functions in each of them.

There is therefore in regard to the ethical scheme which I am sketching a great demand for empirical research, for the accumulation of new data, for comprehensive observation and comparison, for keener insights, for change. The ethical scheme which I am submitting does not propose a simple rule like the Kantian, which once and for all settles the proprieties of moral conduct. It does not impose a hard and fast moral code from which nothing can be subtracted, to which nothing can be added. It does not set up a single ideal personality in which ethical perfection has been achieved once and for all. It is endlessly flexible, capable of adaptation to altered conditions. Only the plan of relationships is offered as a pattern. And even that pattern is bound to become more definite, richer, as the process of filling it with empirical content proceeds.

Have we any light thus far on that superlative thing which we call the excellence of woman, the genuine womanliness, which it is the work of her partner to educe in her, and which supplies our knowledge of the function which she is to exercise on the man and on the offspring? We must seek it from history, from literature, from psychology, from personal, intimate contact.

Woman has not been merely the slave of man in the past; she has been sibyl, prophetess, priestess, oracular Pythia, goddess, Mother of the Gods in Asia Minor, Isis in Egypt, the Queen of Heaven, the Mary full of grace in mediæval Europe. Of signal importance also for the formation of the ideal of woman's most excellent quality are the ideals of her as consecrated in the arts, of which images there is a great gallery—the women of Homer, the women of the Greek tragedies, the sculptured shapes of feminine divinities, Dante's Beatrice, Goethe's Makarie. And ever there has been a correlative ideal image formed of man.

The relation I am signalizing is the paradigm of the spiritual relations in all the wider groups—the vocation, the state, the international society.—And let me here add this note that the relation is not one of complementation, it is very sharply to be distin-

guished from complementation. Complementation is an empirical notion, that which I am emphasizing is a spiritual notion. Complementation implies that a certain quality is missing in one, and may be supplied by assimilating that quality, appropriating that quality from another. And this process may also be conceived of as mutual, the negatives on either side being filled up by the positives on the other.

But the spiritual part of man, the essence in him, the differentiated real, the eternal monad, is without defect. There is no void in it to be filled up, no alien energy to be assimilated. It is integral, a solid, as it were, and the effect exercised by its fellow reals upon it is not to complement it, but to establish its uniqueness, to evoke from it its distinctive energy, to make it more absolutely *sui generis*, if the paradoxical expression be allowed, than it could be in isolation.

The eternal world may thus be said to present the spectacle of a meadow on which bloom an endless variety of plants and flowers, or better, because this would be a static picture, to a galaxy in which the distinctively colored light of each star is kindled by the diverse rays of the innumerable host of which it is one.

Or again the efforts of human society to organize itself after the spiritual pattern may be compared to a company of serious artist-actors engaged in the performance of a play. There is no principal actor. There are major and minor rôles, but the least important is equivalent to the most important, in virtue of the circumstance that he who performs it is absorbed in searching out the best possible performance of those other even superior rôles, and seeks to adapt his own performance so as to facilitate the manifestation of utmost excellence in the rest. Hamlet says: "The play's the thing"; I should say here, the interplay's the thing.

The same point of view is applicable to the larger groups, to industry, for instance, where the variety of natural gifts, as of the scientists employed in the laboratories connected with the plants, the artists connected with the textile industry, executives, inventors, mechanics, etc., furnish the basis for the distribution of functions or rôles. And the ideal evolution of industry would have for its aim not merely or chiefly the contribution of a certain

tangible good to the use of the community, but the ideal aim would be the organization itself of the industrial group, of the personalities that are members of it, the most inferior functionary being on a par with the superior by consciously participating in the task of organization. The transformation of the producers through their relations to one another, and not the product, would be the ultimate prizeworthy aim.

Again, when mankind shall be sufficiently far advanced to consider the different nations of the earth as depositories of special gifts, as functionaries, then the foundation of a society of nations will be securely laid.

A few additional statements need to be made in order to complete this sketch. There is in finite man a certain movement toward the infinite. There is a striving beyond the bounds of the finite in the direction of the infinite, pronounced in some, obscurely present in the larger number. Even in science this striving is the animating impulse. The greatest scientists are those who never rest on what has been achieved. As one said recently —"We have reached only the shore, the great ocean lies beyond us." Infinite knowledge is the aim. In art it is the same, infinite beauty is the aim. But in Ethics the perfect society, the perfect organization of personalities, is the ideal aim.

Next, the morality of the groups in their relation to one another is that of the narrower group widening into the larger, the spiritual training gained in the former being the condition of fruitful experience in the next succeeding group. In the narrowest group, the relations are most intimate; in the wider groups they are more varied; and yet in none of them does man achieve his objective value, his cosmic dignity, for that depends on his being indispensable to the manifestation of the total possibilities of being in a unified plurality. And only as the object of the diverse energies of all his infinite spiritual compeers does he attain to objectivity.

In none of the groups to which he belongs, the family, the vocation and the rest, are the conditions fulfilled on which this objectivity depends. He must still seek beyond the finite groups if he would obey the striving towards the infinite. The number of individuals with whom he is associated in the groups is small. The diversities represented by them are numerically and qualita-

tively few. In none of his actual social relations is man exposed to the impact, the onset, of the infinite host. In none of them is his absolute reaction called out. In none of them, therefore, are the persons with whom he is associated absolutely necessary to him or he to them, as the organic ideal prescribes reciprocal necessity. In moments of fervent love the lover may affirm that the existence of the beloved is necessary to his existence, that he cannot live without her, or, on the other hand, she without him. But this necessity gradually becomes enfeebled, turns into a habit, a transient good fellowship. It is but a gleam, a shimmer of the infinite spiritual necessity that for a moment shines through the earthly relationship.

It is chance that brings us into contact with one another. The dearest companion, chance has put him or her in our way. Had circumstances been otherwise, someone else might have occupied his place. The children that we are to rear, chance brings them to our bosom. Strains of heredity appear in them branching back along lines scarcely to be followed or traceable sometimes to characters repugnant to our own. Even in the most fortunate instances, in the case of those whose qualities we most admire, whom we most cherish, there are always subtle, secret, perhaps unavowed incompatibilities; there is never a perfect attunement between two human beings, let alone between more than two.

There remains, therefore, the practical task of organizing these natural relationships, of dealing with those who are associated with us by chance as if they were to be made necessary to us.

In the happy relationships, in marriage, for instance, the thought of a tie of necessity to be thus created will give a touch of spiritual beauty, of exquisite fineness in intercourse such as the empirical motives, the desire just for companionship, comfort, or mutual æsthetic enjoyment, cannot furnish. We shall enjoy the excellence in the other, but divine an excellence beyond that already manifest, and go in quest of that which lies beyond.

While where the relations are unhappy, wretched, miserable, where there is hardness on one side, frivolity on the other, spiritual deadness, then in these worst cases, and they exist not only in marriage but in industry, in politics, in the international sphere; where we look out upon a world groping in darkness, confused,

ethically in its infancy,—just in these worst cases the spiritual nature, for those who feel its prompting, is challenged to assert itself to the uttermost, and it will find relief in vision.

Vision is to be distinguished from dream. The dream, say the psychoanalysts, has a meaning. It signalizes suppressed instincts, passions, appetites, which we have derived from our animal ancestry, which are to be sublimated, while the vision is orientated from the outset toward the sublime which is to be installed in human experience. The vision is the creation of the spiritual part and assures the existence of that which creates it. It gives to the beholder a two-fold uplift—the uplift that comes from seeing perfection as congenial to man's essential being, and the other uplift which is due to a reaction of the vision upon the beholder, a reaction of such a kind that he will endeavor to transform himself, to become such a one that his fellows of the group, if spiritually changed, would welcome him as their spiritual companion, as a true spiritual correlative.

Thus both the successes and the failures and frustrations we meet with in the endeavor to organize the finite groups, are experiences that lead us beyond this finite human society to the seeing in mind the infinite society, the multiple godhead.

Facturusne operæ pretium sim non satis scio.

These words which Livy sets at the beginning of his work I place at the end. "I do not know whether the result will be thought to repay the labor bestowed." Livy goes on to say that in the labor itself he sees a reward, inasmuch as it averts his gaze from the evils of the times in which he lives (the time of the Civil Wars) and turns his face back to the brave days of old, and the noble human types that then existed. Unlike Livy we of today look for encouragement, not backward to the past, but forward to the progress of the human race. Not indeed as if perfection were somehow to be attained in the distant future at the end of the journey. The world of perfection exists now, forever exists, a world of changeless change, bathed in the radiance of perpetual accomplishment,—a world the flux and reflux of whose spiritual tides constitute the systole and diastole of eternal life. The infinite ideal does not need to be realized,—it *is* real. The

progress of mankind consists in ever more and more realizing the reality of it.

Thus ethical experience opens out into a religion, and the probing of what is distinctive in ethical experience permits a metaphysical construction, alternative to those that now prevail, and offers, I submit, a new approach to the problem of ultimate reality.

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THE RÔLE OF EXPERIENCE IN DESCARTES' THEORY OF METHOD (I).

I. The Ideal of Mathematical Certitude.

IN a familiar passage of the *Discourse on Method* Descartes tells of the profound sense of dissatisfaction which he experienced when, in the year 1616, having come to the end of his formal education, he looked back upon the whole course of instruction that he had undergone and attempted to take stock of the results.[1] In particular, he found himself plunged into utter scepticism concerning the whole of the traditional teaching on physical science, for he reflected that in this field there was scarcely a single question on which men of equal ability did not hold contrary opinions. "But whenever two men come to opposite decisions about the same matter one of them at least must certainly be in the wrong, and apparently there is not even one of them in the right; for if the reasoning of the second was sound and clear he would be able so to lay it before the other as finally to succeed in convincing his opponent also." [2]

Now as a matter of fact, Descartes' scholastic preceptors themselves fully recognised the limitations and defects of their own physical science; and Descartes, when he so pointedly contrasts the mere probabilities of the current teaching in natural science with the absolute certitude of mathematical demonstrations, is no more than following their example.[3] But they were accustomed to

[1] *Discours de la Méthode*, I^e^ Partie, *Œuvres de Descartes*, ed. Adam and Tannery (All future references to the original works of Descartes are to this edition), Vol. VI, pp. 4 *sqq.*

[2] *Regulæ ad Directionem Ingenii*, Regula II, Vol. X, pp. 362–363. Translation from *The Philosophical Works of Descartes*, rendered into English by Elisabeth S. Haldane and G. R. T. Ross. In 2 Vols. Cambridge, 1911 (hereafter cited as H. R.), Vol. I, p. 3.

[3] *Cf.* Christophori Clavii, S. J., *Operum Mathematicorum*, Moguntiæ, 1611, Vol. I, Prolegomena, p. 5 (Cited by É. Gilson, *René Descartes' Discours de la Méthode, Texte et Commentaire*, Paris, J. Vrin, 1925 (hereafter referred to as Gilson, *Comment.*), p. 128: "Mathematicæ disciplinæ sic demonstrant omnia, de quibus suscipiunt disputationem, firmissimis rationibus, confirmantque, ita ut

maintain, following Aristotle, that in matters of physics absolutely demonstrative proofs are impossible, and that we must therefore here content ourselves with no more than probable conclusions. Descartes, however, found himself unable to put any confidence whatever in conclusions that were merely probable. A "science" that did not possess the demonstrative certitude which he admired in mathematics he thought unworthy the name.[4] And when he himself came back at a later date to the systematic study of physical problems, it was with the conviction, begotten of his reflexions upon the method of mathematics, that this method, with all its rigor of demonstration and certitude of results, was capable of application also in the sphere of the natural sciences.

Accordingly we find Descartes frequently describing physics as a true science after the mathematical model, and on occasion seeming to hold it capable of purely *a priori* deduction in its entirety, and with absolute certainty, from self-evident principles innate in the human reason. For example, he writes, "As for physics, I should believe myself to know nothing of it if I were able to say only how things may be without demonstrating that they cannot be otherwise; for having reduced physics to the laws of mathematics it is possible to do this, and I believe that I can do it in all that little that I believe myself to know."[5] Elsewhere Descartes tells us how he "observed certain laws" the ideas of which God has "imprinted on our minds," and how "by considering the sequence of these laws, it seems to me that I have discovered many

vere scientiam in auditoris animo gignant, omnemque prorsus dubitationem tollant: id quod aliis scientiis vix tribuere possumus, cum in eis sæpenumero intellectus multitudine opinionum ac sententiarum varietate in veritate conclusionum judicanda suspensus hæreat atque incertus. . . . Cum igitur disciplinæ mathematicæ veritatem adeo expetant, adamant, excolantque, ut non solum nihil quod sit falsum, verum etiam nihil quod tantum probabile existat, nihil denique admittant quod certissimis demonstrationibus non confirment, corroborentque, dubium esse non potest quin eis primus locus inter alias scientias omnes sit concedendus." *Cf.* also other scholastic texts cited by Gilson, *Comment.*, p. 138. *Cf.* G. Milhaud, *Descartes savant*, Paris, Alcan, 1921, p. 235: "Si Descartes est mécontent de l'enseignement de l'École, ce mécontentement lui-même et son désir de savoir autrement et davantage ne sont-ils pas dus en partie à ce qu'il avait appris?"

[4] *Cf. Regulæ ad Directionem Ingenii*, Regula II, Vol. X, p. 362: "Omnis scientia est cognitio certa et evidens." *Cf. Discours de la Méthode*, Vol. VI, pp. 12–13.

[5] *Letter to Mersenne*, 11 March, 1649, Vol. III, p. 39.

truths more useful and more important than all I had formerly learned, or even hoped to learn." [6] Of these he had originally intended to expound in *Le Monde* all that had to do with "the nature of material objects;" [7] and, writing of the project to Mersenne, he says, "I am resolved to explain all the phenomena of nature, that is to say the whole of physics." [8] And finally, in *Le Monde* itself Descartes wrote, "those who shall have sufficiently examined the consequences of these truths and of our rules will be able to know effects by their causes; and, to explain myself in scholastic terminology, will be able to have demonstrations *a priori* of everything that can be produced in this new world." [9]

II. The Limits of Pure *a priori* Physics.

So far Descartes seems to be taking Aristotle's *ideal* of a perfect science altogether *au sérieux*, as literally realisable, and in strict mathematical form, even in our knowledge of the physical world. But, as we shall shortly see, he really knows quite well how impossible it is actually to carry through any such ambitious programme as that of a physics that should be completely demonstrable, down to its very last details, in a purely *a priori* fashion. We accordingly find him forced by the exigencies of the facts so to interpret and to qualify such extreme claims as he sometimes seems to make for his physics, as really to come out, however hesitatingly and reluctantly, with a theory of natural science, and of the limits of scientific certitude, not far removed from that of Aristotle himself.

After all, the passages in which Descartes even appears explicitly to maintain the *a priori* demonstrative nature of the *whole* of physics are relatively few in number. More often he is content to attribute this character to the *primary* physical principles alone. Thus he writes, "The foundations of my Physics . . . are nearly all so evident that it is only necessary to understand them in order to accept them, and . . . there is not one of them of which I do not believe myself capable of giving demonstra-

[6] *Discours de la Méthode*, V^e^ Partie, Vol. VI, p. 41, H. R., Vol. I, pp. 106–107.

[7] *Loc. cit.*

[8] *Letter to Mersenne*, 13 November, 1629, Vol. I, p. 70.

[9] *Le Monde*, Vol. XI, p. 47.

tion.[10] And elsewhere he tells us that the demonstration here in question "which I hope to do some day" is the proof of "the principles of Physics by Metaphysics."[11] Or again, "the order which I have followed is as follows: I have first tried to discover generally the principles or first causes of everything that is or can be in the world without considering anything that might accomplish this end but God Himself who has created the world, or deriving them from any other source excepting from certain germs of truths which are naturally existent in our souls."[12]

In fact, however, he does occasionally go somewhat farther than this. For even the explanatory principles which he uses in the *Météores,* which, wishing for the moment to avoid any exposition of the fundamental principles of his physics,[13] Descartes is there content to characterise merely as hypotheses or "suppositions," *can* be derived by *a priori* deduction from the primary physical principles,[14] and are therefore mediately derivable, like these primary principles themselves, from the first principles of metaphysics.[15]

In the light of what follows it will perhaps appear doubtful whether even here Descartes is thinking of a *purely a priori* deduction, in the strictest sense of the term; but at any rate he certainly nowhere makes any perfectly explicit and unqualified claim that the powers of this sort of deduction extend any *farther* than this, however much such a claim may at first sight seem to be implied in such more extreme general statements as those quoted above.

In fact these general statements, even considered in themselves,

[10] *Discours de la Méthode,* VI^e^ Partie, Vol. VI, p. 68. Tr. H. R., Vol. I, p. 123.

[11] *Letter to Mersenne,* 27 May, 1638, Vol. II, p. 141.

[12] *Discours de la Méthode,* VI^e^ Partie, Vol. VI, pp. 63–64. Tr. H. R., Vol. I, p. 121.

[13] For the motives of this reticence, *cf.* Gilson, *Comment.,* pp. 471–474.

[14] *Cf. Letter to Vatier,* 22 February, 1638, Vol. I, p. 563: "As to the hypothesis that I make at the beginning of the *Météores,* I could not demonstrate it *a priori,* without giving the whole of my Physics. *Cf. Discours de la Méthode,* VI^e^ Partie, Vol. VI, p. 76: "I consider myself able to deduce them from the primary truths which I explained above." Tr. H. R., Vol. I, p. 129.

[15] *Cf. Letter to Vatier,* 22 Feb. 1638, Vol. I, p. 564: "les croyant déduire par ordre des premiers principes de ma Métaphysique."

are susceptible of an interpretation (and in view of the ensemble of his doctrine we must take this to be the only interpretation which Descartes himself would mean seriously to defend) that does not really involve any such extravagant view of the matter. For there are two quite different senses in which it might be held that the whole of physics is demonstrable deductively from purely *a priori* principles. It might be held, namely, on the one hand, that it is possible, starting exclusively with principles self-evident *a priori*, and without ever introducing any merely empirical premisses, to proceed from these primary truths alone, by purely deductive reasoning, to the discovery and proof of all the truths of physics down to the last detail, in such wise that we should have a demonstration purely *a priori* of the absolute necessity of every fact and phenomenon of nature. On the other hand, it might be held that it is the general explanatory principles of physics *alone* that are deducible in this *purely a priori* fashion. We could, on this view, know by purely *a priori* reasoning that the explanation of every fact and phenomenon of nature is to be found in terms of these general explanatory principles, and nowhere else; but we could *not* discover by any process of pure *a priori* deduction from these principles alone that just this or that *particular* fact or phenomenon and no other, caused in just this or that *particular* fashion, and no other, must necessarily occur. To put it in other terms, the "laws of nature" may, on this view, contain, in a sense, the *explanation* of every particular natural occurrence. But after all, they only "explain" it by showing how, given the truth of these laws, this particular occurrence is the necessary consequence of some previous particular occurrence or set of occurrences. The particular occurrence is thus deducible from the laws, but only when additional premisses are introduced, *viz.*, knowledge concerning *other* particular occurrences. According to this way of viewing the matter, a knowledge of particular natural phenomena is never deducible *wholly a priori*, even if the laws which govern and explain its occurrence are themselves known independently of any merely empirical validation. With regard to wholly particular occurrences the laws serve, after all, only to confine and to limit the possibilities. They tell us that whatever particular events may occur they must necessarily (given the truth of the laws) fulfil

certain fixed functional relationships. But apart from this they do not suffice to determine their occurrence. In a word, the history of the universe is not deducible from the laws of nature *alone*. It involves a factor of contingency which eludes all determination by the universal. It is deducible, at best, from the laws of nature *plus* certain empirical information about particular occurrences. Yet it would still remain true that, given a sufficient amount of such purely empirical information, the whole history of the physical universe could *then* be derived deductively from the *a priori* principles.

Now if we examine Descartes' more extreme statements of his view in the light of this distinction, it is clear that they are quite susceptible of being interpreted as involving no more than would be implied in this latter view. In the first of the statements quoted above, for example, he actually says, after all, only that he believes, with regard to "all that little I believe myself to know" in physics, that he is able not merely "to say how things may be," but also to demonstrate "that they cannot be otherwise." *I.e.*, not only *do* particular natural occurrences happen in accordance with the general laws, but they *must* do so, since these laws are not themselves of merely empirical origin, but are demonstrated purely *a priori* from self-evident principles. But it is not *explicitly* stated that it can be demonstrated that they cannot be otherwise, by deducing them from these necessary universal laws *alone*. In the second of our passages Descartes claims merely to be able, in terms of certain *a priori* laws "to *explain* all the phenomena of nature, that is to say, the whole of physics" (Italics mine). And in the passage from *Le Monde* he professes indeed to have "demonstrations *a priori*, but only of "all that *can* be produced in this new world" (Italics mine), *i.e.*, the *a priori* laws, as we said above, serve, with regard to particular occurrences, only to confine and limit the possibilities.

III. The Empirical Bases of Physics.

We now proceed to show not only that (as we have already indicated above) these more extreme statements of Descartes are *susceptible* of such an interpretation as that just given, but further, that considered in the light of the rest of his own statements about

his theory of science, and in the light of his own practice as a scientific enquirer, they positively *require* such an interpretation. For despite all appearance to the contrary, the physical sciences, in the Cartesian conception of the matter, rest upon a solidly empirical basis.

It is true that Descartes sometimes has harsh and disparaging things to say about experience. He refers, for example, to "the fluctuating testimony of the senses;" [16] or writes, "We must note then that there are two ways by which we arrive at the knowledge of facts, *viz.* by experience, and by deduction. We must further observe that while our inferences from experience are frequently fallacious, . . . none of the mistakes which men can make . . . are due to faulty inference; they are caused merely by the fact that we found upon a basis of poorly comprehended experience, or that propositions are posited which are hasty and groundless." [17]

But three things are here to be remembered. In the first place, such passages from Descartes may be paralleled with equally severe expressions from Francis Bacon himself. For example, "By far the greatest impediment and aberration of the human understanding proceeds from the dullness, incompetence, and errors of the senses." [18] Or, "There remains but mere experience, which, when it offers itself is called chance; when it is sought after, experiment. But this kind of experience is nothing but a loose fagot, and mere groping in the dark. . . ." [19] Again Bacon speaks of "the uncertain light of the sense that sometimes shines, and sometimes hides its head" or of "collections of experiments and particular facts, in which no guides can be trusted, as wanting direction themselves, and adding to the errors of the rest." [20]

In fact neither Bacon nor Descartes had any confidence in opinions founded upon the uncriticised experience of the senses. For correcting the errors consequent upon a naïve trust in the testimony of such experience both place their reliance upon the adoption of a right *method* of conducting scientific enquiry. And both thus seek an intimate alliance of experience and reason.

[16] *Regulæ ad Directionem Ingenii*, Regula III, Vol. X, p. 368.
[17] *Ibid.*, Regula II, Vol. X, pp. 364–365. Tr. H. R., Vol. I, pp. 4–5.
[18] *Novum Organum*, Book I, Aph. 50.
[19] *Ibid.*, Book I, Aph. 82.
[20] *The Great Instauration*. Author's Preface.

Thus Bacon says, "the true labour of philosophy . . . neither relies entirely or principally on the powers of the mind, nor yet lays up in the memory the matter afforded by the experiments of natural history and mechanics in its raw state, but changes and works it in the understanding." [21] "We have good reason, therefore, to derive hope from a closer and purer alliance of these faculties (the experimental and the rational) than has yet been attempted." [22] "And thus we hope to establish forever a true and legitimate union between the experimental and the rational faculty, whose fallen and inauspicious divorces and repudiations have disturbed everything in the family of mankind." [23] And Descartes, in similar vein, not only remarks upon "the small faith that we ought to put in observations not accompanied by true reason," [24] but also upon the impossibility of doubting the truth of his explanations because "in all this reason accords so perfectly with experience;" [25] and even more significantly writes to Plempius, "I use that sort of philosophising in which there is no principle that is not mathematical and evident, and its conclusions confirmed by true experiments." [26]

In the second place, we must add to these expressions the fact that Descartes is known to have been throughout his life both a keen and persistent observer of natural phenomena and an indefatigable experimenter.[27] And finally we must note how Descartes again and again insists upon the indispensability for physical science of a wide empirical foundation in careful observation and experiment. For example, he tells us [28] how in 1619, when he first conceived the project of reconstructing the edifice of physics anew, in accordance with his recently developed theory of method, he realised that the time was not yet ripe for the accomplishment of this programme. The plan could be carried into effect only after he should first have elaborated his metaphysics (for the

[21] *Novum Organum*, Book I, Aph. 95.

[22] *Loc. cit.*

[23] *The Great Instauration*, Author's Preface.

[24] *Météores*, Discours VIII, Vol. VI, p. 340.

[25] *Ibid.*, Vol. VI, p. 334.

[26] *Letter to Plempius*, 30 Oct., 1637, Vol. I, pp. 420–421.

[27] *Cf.* Gilson, *Comment.*, pp. 269–272, 397; G. Milhaud, *Descartes savant*, Ch. IX, "Descartes Expérimentateur," especially pp. 197 *sqq.*

[28] *Discours de la Méthode*, Vol. VI, pp. 21–22.

fundamental laws of physics were to be deduced from the primary principles of metaphysics), and, moreover, only after he should first of all have employed "much time in preparing myself for the work by . . . accumulating variety of experiences fitted later on to afford materials for my reasonings."[29] In a later passage Descartes notes that he actually carried out this latter part of his preparation: "I made various observations and acquired many experiences."[30] And still later he describes how he proceeded in the actual construction of his new system of physics: "First, I have tried to discover generally the principles or first causes of everything that is or can be in the world, without considering anything that might accomplish this end but God Himself who has created the world, or deriving them from any source excepting from certain germs of truths which are naturally existent in our souls." But "then, when I wished to descend to those which were more particular," he found it impossible to proceed "if it were not that we arrive at the causes by the effects, and avail ourselves of many particular experiments."[31]

Descartes' account of the way in which he applied his method to the examination of the problem of the circulation of the blood, moreover, affords positive confirmation of the view stated above concerning the limitations under which alone he may be understood to have maintained that the natural sciences are constructed by *a priori* deduction from the first principles of metaphysics. For in dealing with this problem he demonstrates deductively (or, as he himself puts it, by "mathematical demonstration"),[32] in accordance with general mechanical principles, in just what way, *given certain empirical data derived from anatomical dissections,*[33] the circulation of the blood takes place. And he himself refers to the empirical data in question as constituting an integral element in the demonstration: "this movement which I have just explained follows as necessarily *from the very disposition of the*

[29] *Ibid.*, Vol. VI, p. 22. Tr. H. R., Vol. I, 94.

[30] *Discours de la Méthode*, III^e Partie, Vol. VI, p. 29. Tr. H. R., Vol. I, p. 99. *Cf.* the Latin version "multa experimenta colligebam."

[31] *Ibid.*, VI^e Partie, Vol. VI, pp. 63–64. Tr. H. R., Vol. I, p. 121.

[32] *Ibid.*, V^e Partie, Vol. VI, p. 50. Tr. H. R., Vol. I, p. 112.

[33] *Ibid.*, V^e Partie, Vol. VI, p. 47. Tr. H. R., Vol. I, p. 110.

organs, as can be seen by looking at the heart, and from the heat which can be felt with the fingers, and from the nature of the blood of which we can learn from experience, as does that of a clock from the power, the situation, and the form of its counterpoise and of its wheels." [34] Similarly in connexion with the problem of the nature of the magnet Descartes writes as follows: "He who reflects that there can be nothing to know in the magnet which does not consist of certain simple natures, will have no doubt how to proceed. He will first collect all the observations with which experience can supply him about this stone, and *from these* he will next try to deduce the character of that intermixture of simple natures which is necessary to produce all those effects which he has seen to take place in connexion with the magnet. This achieved, he can boldly assert that he has discovered the real nature of the magnet in so far as human intelligence *and the given experimental observations* can supply him with this knowledge." [35]

There thus remains, according to Descartes himself, an inexpugnable and indeed indispensable empirical factor in the very heart of his *a priori* deductive physics. It follows *a fortiori* that whatever part mathematical methods (in the narrower and more technical sense) may play in the Cartesian physics, there can be no real question of any "reduction of physics to mathematics" or of any conceivable deduction of physics from purely mathematical premisses alone. And Descartes makes it quite plain that he recognises this fact. For in the Second Part of the *Discourse*, after briefly characterising his "universal mathematics" [36]—a mathematical discipline (more fully developed in the *Rules for the Direction of the Mind* [37]) which should be capable of resolving the problems not only of pure mathematics (arithmetic and geometry) but also of those other sciences then denominated "mixed mathematics," [38] especially "Astronomy, Music, Optics,

[34] *Ibid.*, V[e] Partie, Vol. VI, p. 50. Tr. H. R., Vol. I, p. 112 (Italics mine).

[35] *Regulæ ad Directionem Ingenii*, Regula XII, Vol. X, p. 427. Tr. H. R., Vol. I, p. 47 (Italics mine).

[36] *Discours de la Méthode*, II[e] Partie, Vol. VI, pp. 19–20.

[37] *Cf. Regulæ* IV, XIV.

[38] *Cf.* Gilson, *Comment.*, pp. 216–217.

Mechanics "[39]—he tells us how, as soon as he was confronted with the problem of actually applying the procedures of this method to such *physical* sciences, he realised that it would be necessary first to accumulate "a variety of experiences fitted later on to afford matter for my reasonings."[40] In other words he realised that the *matter* of his reasonings could not here be deduced *a priori* from mathematical principles, but must be furnished by experience.

He reverts to the same point in the third part of the *Discourse* where he says, "I set aside some hours from time to time which I more especially employed in practising myself in the solution of Mathematical problems according to the Method, or in the solution of other problems which though pertaining to other Sciences [*i.e.*, to "mixed mathematics"], I was able to make *almost* similar to those of mathematics, by detaching them from all principles of other sciences which I found to be not sufficiently secure [*i.e.*, from the doctrines of scholastic physics]."[41] To make them *quite* mathematical was impossible, for "Sciences such as Optics, Meteorology, etc., appeal to notions which are not reducible to the abstract numerical relationships upon which the universal mathematics works. In this sense the complete mathematisation of physics is impossible, and it is so in a way by definition; for as soon as mathematics cease to be pure, they require a datum to which they are applied and which they interpret, but which they accept without themselves being able to justify."[42]

Elsewhere also Descartes insists that physical science, although in a certain sense mathematical and geometrical, is not so in any unqualified sense. Its demonstrations are by no means simply on all fours with those of Euclid. The geometry of the mathematicians is an *abstract* geometry; physical science can on the contrary employ only a *concrete* geometry. Thus he writes to Mersenne, "I have decided to abandon only abstract geometry, that is to say the inquiry into questions which only serve to exercise the

[39] *Cf. Regulæ* IV, Vol. X, p. 377; *Discours de la Méthode*, II[e] Partie, Vol. VI, p. 21: "je me promettais de l'appliquer aussi utilement aux difficultés des autres sciences que j'avais fait à celles de l'Algèbre."

[40] *Discours de la Méthode*, II[e] Partie, Vol. VI, p. 22, H. R., Vol. I.

[41] *Ibid.*, III[e] Partie, Vol. VI, p. 29, H. R., Vol. I, p. 99 (Italics mine). *Cf.* especially "quasi semblables à celles des Mathématiques."

[42] Gilson, *Comment.*, p. 272.

mind; and that in order to have so much the more leisure to cultivate another sort of geometry, which takes as its problem the explanation of the phenomena of nature." [43] Again, "You ask me whether I hold that what I have written of refraction is a demonstration; and I believe that it is, at least as far as it is possible to give one in this matter . . . and as much as any other question of Mechanics or Optics, or of Astronomy, or any other matter which is not purely geometrical or arithmetical has ever been demonstrated. But to require of me geometrical demonstrations in a matter which depends upon Physics is to wish me to do the impossible. And if we are to call demonstrations the proofs of the geometers alone, we must then say that Archimedes never demonstrated anything in Mechanics, nor Witelo in Optics, nor Ptolemy in Astronomy, etc., which, however, we do not say." [44] In the following passage Descartes seems at first sight to speak in the contrary sense: "I receive no principles in physics which are not also received in mathematics." [45] But mathematics must here be understood in the wide sense which includes "mixed" mathematics, and therefore *mechanics* as well as arithmetic and geometry. Liard also quotes Descartes as saying, "My entire physics is nothing but geometry." [46] But geometry must here be taken in the sense of *concrete* geometry.

In the light of the foregoing it is not so surprising as it might otherwise at first sight appear to find Descartes denouncing in no uncertain terms, and with what might well be the voice of Francis Bacon himself, "those Philosophers who, neglecting experiences (*experimentis neglectis*) think that truth will spring from their brains, like Pallas from the brain of Zeus." [47]

But it is time to examine more closely the rôle which Descartes assigns to experience in connexion with the problems of physics. What is the function of those large accumulations of empirical

[43] *Letter to Mersenne*, 27 July, 1638, Vol. II, p. 268.

[44] *Letter to Mersenne*, 17 May, 1638, Vol. II, pp. 141–142. *Cf.* also the sharp line which Descartes draws between mathematics and physics in discussing the problem of the anaclastic line (Regula VIII).

[45] *Letter to Mersenne*, 27 July, 1638, Vol. II, p. 268.

[46] Liard, Louis, *Descartes*, Paris, 1882, p. 74 (I have not been able to verify the reference to Descartes).

[47] Regula V, Vol. X, p. 380, H. R., Vol. I, p. 15.

observations which Descartes, like Bacon,[48] is so anxious to have at his disposal, and without which he regards it as useless to embark upon any physical enquiry?[49]

(1) The *a priori* development of the fundamental laws of nature serves, as we have seen, to set definite limits to what is physically possible. Nothing can happen which is not in accordance with these laws, and nothing which requires for its explanation any other laws. But within the limits thus prescribed there still remain open for the physical universe practically infinite possibilities. If we were to attempt to set forth in detail *all* that can be deduced from (*i.e.*, all that can be shown to be in accordance with, and explicable in terms of) these laws, we should have upon our hands a task not only endless, but useless, since most of these possibilities are never, so far as we know, actually realised. What we desire is to explain the phenomena of *our* universe—to know how *these* can be accounted for in terms of the fundamental principles that govern all natural happenings. Only empirical observation can tell us what these phenomena are, and only it, accordingly, is capable of setting the problem which we wish to resolve. Descartes explains the point clearly, as follows: "The principles which I have discovered are so vast and so fertile that much more follows from them than we see happen in this visible world, and even much more than our minds can ever exhaust in thought. But we place before our eyes such a brief history of the principal phenomena of nature (whose causes are here to be investigated); not indeed in order to use these as grounds for proving anything: for

[48] Bacon calls such accumulations by the name of "Natural History" (*Cf. Novum Organum*, I, 98; *Distrib. Op.; Parasceve; Sylva Sylvarum*, etc.). Descartes refers to Bacon more than once in this connexion. *Cf. Letter to Mersenne*, 10 May, 1632, Vol. I, pp. 251–252, where he desires to have compiled "l'histoire des apparences célestes, selon la méthode de Verulamius et que, sans y mettre aucunes raisons ni hypothèses, il nous décrivit exactment le Ciel, tel qu'il parait maintenant, quelle situation a chaque étoile fixe au respect de ses voisines, quelle différence, ou de grosseur, ou de couleur, ou de clarté, ou d'être plus ou moins étincelantes, etc. . . ." *Cf. Letter to Mersenne*, 23 December, 1630, Vol. I, pp. 195–196. On the curious general accord between Descartes and Bacon and the basis upon which it rests *cf.* Gaston Milhaud, *Descartes savant*, Paris, Alcan, 1921, Ch. X, Descartes et Bacon, pp. 213 *sqq.* Also A. Lalande, *Quelques textes de Bacon et de Descartes*, Revue de Métaphysique et de Morale, 1911.

[49] *Cf. Discours de la Méthode*, VI^e^ Partie, Vol. VI, pp. 63, 64–65, 75.

we desire to deduce the explanation of effects from their causes, not that of causes from their effects; but merely in order that from among the innumerable effects which we judge capable of being produced by these same causes, we may determine our minds to the consideration of some rather than others." [50]

(2) In the early stages of the development of a science, Descartes holds, it is better to make use, for this purpose, "simply of those (*sc.* experiments) which present themselves spontaneously to our senses, and of which we could not be ignorant, provided we reflected ever so little, rather than to seek out those which are more rare and recondite." [51] This is the single point upon which Descartes criticises the method of Bacon. The latter is constantly insisting upon the superior value, as a foundation for science, of detailed and artificial experiments, as contrasted with every-day "experiences." Speaking of his project of a "natural history" he writes, "With regard to its collection; we propose to show nature not only in a free state, as in the history of meteors, minerals, plants, and animals; but more particularly as she is bound, tortured, pressed, formed, and turned out of her course by art and industry . . . for the nature of things is better discovered by the torturings of art, than when they are left to themselves. . . . The kind of experiments to be procured for our history are much more subtle and simple than the common; abundance of them must be recovered from darkness, and are such as no one would have inquired after, that was not led by constant and certain tract to the discovery of causes." [52]

In Descartes' view of the matter, information based upon elaborate experiments of this sort is useless and confusing until a later stage of development has been attained. The defect of Bacon's project of "natural history" consists in the fact that Bacon failed to discriminate between the sort of empirical information which is of service at the beginning of inquiry into the problems of the physical universe, and that which is appropriate only to the more advanced stages of the investigation. Descartes expressed his attitude in the matter in a letter to Mersenne, as follows: "I had

[50] *Principiorum Philosophiæ*, Pars Tertia, Cap. IV, Vol. VIII, pp. 81–82.
[51] *Discours de la Méthode*, VI[e] Partie, Vol. VI, p. 63, H. R., Vol. I, p. 120.
[52] *The Great Instauration*, Plan of the Work.

forgotten to read a paper that I just found in your letter, in which you inform me . . . that you wish to know a means of making useful experiments. As to that I have nothing to say, after what Verulam has written concerning it, except that, without being too curious in searching out all the little details concerning a matter, it would be necessary chiefly to make general collections of all the most common things, such as are most certain, and can be known without expense. As that in all shells the spirals turn in the same direction, and to know whether it is the same on the other side of the equator. That the bodies of all animals are divided into three parts, head, chest, and abdomen, and the like; for these are the things which serve us without fail in the search for the truth. As for the more particular experiments, it is impossible not to make many that are superfluous, and even false, if one does not know the truth of things before making them." [53]

The main point is contained in the last sentence. It is one of the principles of the Cartesian method that we should preserve in every inquiry the order of the simple to the complex. We should solve the simpler and easier problems before attacking the more difficult and more complex. Here is a case in point. It will be difficult or impossible for us to find the right explanation of more recondite phenomena, unless we have first begun by explaining such facts of nature as are easily accessible. Moreover, once we have discovered the right principles to explain the latter—which is relatively easy to do—we shall find that the more detailed phenomena are readily explicable in terms of the same principles. As Descartes puts the matter, "As to those sciences . . . some are deduced from common objects of which everyone is cognisant, and others from rare and well thought out experience. And I confess likewise that it would be impossible for us to treat in detail each one of these last. . . . But I shall believe myself to have sufficiently fulfilled my promise if, in explaining to you the truths which may be deduced from common things known to each one of us, I make you capable of discovering all the others when it pleases you to take the trouble to seek them." [54] There is no use piling up miscellaneous experimental data, until we are in possession of

[53] *Letter to Mersenne*, 23 December, 1630, Vol. I, pp. 195–196.

[54] *La recherche de la vérité*, Vol. X, p. 503, H. R., Vol. I, pp. 309–310.

the fundamental principles which serve to explain the general fabric of nature. To make elaborate experiments is expensive, difficult and troublesome, besides consuming much time. It is better to wait until they are really needed, and we are equipped with sufficient knowledge of nature in general to attack their solution with some hope of success.[55]

In Descartes' own procedure, therefore, as he describes it to us in the sixth part of the *Discourse*, he first gave an *a priori* deduction of the primary principles of all physics, and next explained as consequences of these principles all such phenomena of nature as everyday experience makes us acquainted with. "After that I considered which were the primary and most ordinary effects which might be deduced from these causes; and it seems to me that, in this way, I discovered the heavens, the stars, an earth, and even on the earth, water, air, fire, the minerals, and some other such things which are the most common and simple of any that exist and consequently the easiest to know." [56]

(3) But once the explanation of such relatively obvious phenomena is fairly well advanced, and we wish to proceed to the explanation of matters of detail, we must then have recourse to many detailed experiments especially designed to reveal the more recondite facts which we have still to explain. "Then when I wished to descend to those which are more particular, so many objects of various kinds presented themselves to me, that I did not think it was possible for the human mind to distinguish the forms or species of bodies which are on the earth from an infinitude of others which might have been so if it had been the will of God to place them there, or consequently to apply them to our use, if it were not that we arrive at the causes by the effects, and avail ourselves of many particular experiments." [57]

(4) It is not enough, however to have, on the one hand, the general principles of explanation, and, on the other, the facts to be

[55] *Cf. Letter to Mersenne*, 18 December, 1629, Vol. I, pp. 99–100: "Pour le *quantum*, je l'ignore, et encore qu'il se pût faire milles expériences pour le trouver à plus près, toutes fois pour ce qu'elles ne se peuvent justifier par raison, au moins que je puisse encore atteindre, je ne crois pas qu'on doive prendre la peine de les faire."

[56] *Discours de la Méthode*, VI^e^ Partie, Vol. VI, p. 64, H. R., Vol. I, p. 121.

[57] *Ibid.*, VI^e^ Partie, Vol. VI, p. 64, H. R., Vol. I, p. 121.

explained. For we frequently find that the particular phenomena in question might be explained, in perfect accordance with the general principles, in either of two quite different ways. So far as the principles themselves tell us, the phenomena may be produced in either way, for they can in either case equally be "deduced" from the principles. But in which way are these phenomena *actually* produced? Only experience, according to Descartes, can tell us. Here then is another function of experience in the Cartesian theory of science—to decide, as between two different ways of "deducing" the phenomenon to be explained, both equally possible *a priori*, which alone accords with the actual procedure of nature. What is needed is, in fact, an *experimentum crucis*, or *instantia crucis*, to use the Baconian expression,[58] *i.e.*, we must seek by careful experimentation *some other* phenomenon which can be accounted for only provided one of the alternatives, and not the other is actually realised. Thus Descartes writes,[59] "In subsequently passing over in my mind all the objects which have ever been presented to my senses, I can truly venture to say that I have not there observed anything which I could not easily explain by the principles which I had discovered. But I must also confess that the power of nature [60] is so ample, and so vast, and these principles are so simple and so general, that I observed hardly any particular effect, as to which I could not at once recognise that it might be deduced from the principles in many different ways; and my greatest difficulty is usually to discover in which of these ways the effect does depend upon them. As to that I do not know of any other plan but again to try to find experiments of such a nature that their result is not the same if it is to be ex-

[58] Gilson (*Comment.*, pp. 456–457) notes one difference between the Baconian *instantia crucis* and the procedure of Descartes at this point—Bacon's crucial instance has for its object rather to discriminate the cause amid the complexity of the given facts, while Descartes' recourse to experience is rather, in the present case, to decide between alternative explanations of a given phenomenon, each equally probable *a priori*, but only one of which accords with the actual facts of nature.

[59] *Discours de la Méthode*, VI^e^ Partie, Vol. VI, pp. 64–65, H. R., Vol. I, p. 121.

[60] *I.e.*, the possibilities of combination of material particles, in accordance with the laws of motion which God has imposed upon them (Gilson, *Comment.*, *ad loc.*).

plained by one of these methods, as it would be if explained in the other."

The facts to which Descartes appeals as against Harvey's version of the theory of the circulation of the blood in the fifth part of the *Discourse* constitute, in his mind, a series of just such crucial experiments.[61] And he sums up the matter elsewhere as follows: "experiments themselves often give us occasion to deceive ourselves, when we do not sufficiently examine all the causes which they may have. . . . But in order to be able to tell which of these two causes is the true one, it is necessary to consider other experiments which cannot be brought into accordance with both."[62]

(5) Finally, the testimony of experience must again be invoked, according to Descartes' view of the matter, at the end of any scientific enquiry, in order to verify and to confirm the results attained. Thus he speaks of "all the experiments necessary to me in order to support and justify my reasoning."[63] Again he writes to Morin, "and I had to make use of these balls . . . in order to submit my reasons to the test of the senses, as I always try to do."[64] And finally, "I use that kind of philosophising in which there is no principle that is not mathematical and evident, and its conclusions confirmed by true experiments."[65] In fact it is an added confirmation even of the primary principles of physics themselves, capable of *a priori* deduction though they be, that they are borne out by experience. Descartes writes in this sense to Huygens,[66] "What I find most strange is the conclusion of the opinion that you have sent me, *viz.*, that what will prevent my

[61] *Discours de la Méthode*, V^e^ Partie, Vol. VI, pp. 52 *sqq*. *Cf*. Gilson, *Comment.*, pp. 409 *sqq*.

[62] *La description du corps humain*, Ch. XVIII, Vol. XI, p. 242.

[63] *Les principes de la philosophie*, Preface, Vol. IX, 17, H. R., Vol. I, p. 213. *Cf*. *La description du corps humain*, Ch. XXVII, Vol. XI, pp. 252–253: "Et bien que je n'aie pas voulu jusqu'ici entreprendre d'écrire mon sentiment touchant cette matière, à cause que je n'ai pu encore faire assez d'expériences, pour vérifier par leur moyen toutes les pensées que j'en ai eu: je ne puis néanmoins refuser d'en mettre ici en passant quelque chose de ce qui est le plus général, et dont j'espère que je ferai le moins en hasard ci-après de me dédire, lorsque nouvelles expériences me donneront davantage de lumière."

[64] *Letter to Morin*, 12 September, 1638, Vol. II, p. 366.

[65] *Letter to Plempius*, 30 October, 1637, Vol. I, pp. 420–421.

[66] *Letter to Huygens*, June, 1645, Vol. IV, pp. 224–225.

principles from being accepted in the School is that they are not sufficiently confirmed by experience. . . . For I marvel that notwithstanding I have demonstrated in detail almost as many experiments as there are lines in my writings, and having given a general explanation in my *Principles* of all the phenomena of nature, have explained by the same means all the experiments that can be made in connexion with inanimate bodies, and on the contrary not one of them has ever been well explained by the principles of the vulgar philosophy, those who follow the latter do not cease to reproach me with lack of experiments."

In the *Principia* itself Descartes refers to the "laws of mechanics, confirmed as they are by certain and daily experience." [67] Again, he admits to a correspondent that an experimental proof that the transmission of light is not instantaneous would ruin his entire philosophy.[68] And Liard points out how Descartes regularly accompanies the *a priori* demonstration of the fundamental laws of mechanics with illustrations of their truth drawn from experience.[69]

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(To be concluded)

[67] *Principiorum Philosophiæ*, Pars Quarta, Cap. CC, p. 323, H. R., Vol. I, p. 296.

[68] "Contra ego, si quæ talis mora sensu perciperetur, totam meam Philosophiam funditus eversam fore inquiebam." (The reference has here escaped me.)

[69] Liard, *Descartes*, pp. 121–124. *Cf.* Descartes, *Principiorum Philosophiæ*, Pars II, Cap. 27–41, 46 *sqq.*

THE REGULATIVE IDEA OF A COSMOS.

IT is sometimes implied that when we choose between two hypotheses, both of which explain all the known facts equally well and follow the principle of simplicity or the so-called law of parsimony, we are not guided by logic or reason but merely by psychological factors of thought-economy or convenience. In fact it appears to be widely believed that logical reasoning is necessarily of the strict deductive type and that when no appeal can be made to deductive logic, whether Aristotelian or mathematical, the decision must be based upon grounds of ease or convenience. Or if a logic of induction is granted it is conceived after the fashion of the canons of Mill, which were supposed to give absolute certainty. The fact seems to be, however, as the great but neglected French philosopher, Cournot, made clear, that in addition to the logic of certainty there is also a logic of probability. The main thesis of the present paper is that the choice between two hypotheses, both of which are compatible with the facts, may and, indeed, normally is, guided by reason rather than by mere thought-economy, and that when our thinking is so guided it rests upon a rather mysterious presupposition as to the nature of the real world, which may be described either in Kepler's phrase 'harmony of the world' or by means of the Kantian notion of a regulative idea of a cosmos. It must be understood that Cournot's conception of reason as a higher regulative faculty which weighs probabilities has little concern with that branch of mathematics which is called the theory of probability.[1] The mathematical theory of probability is itself a branch of deductive or apodictic reasoning and starts with certain relatively simple, ideally defined, situations analogous to games of chance and deduces their consequences. We shall be concerned with what is called qualitative or non-

[1] Of Cournot's two important philosophical works the earlier, the *Essai sur les fondements de nos connaissances*, new edition, Paris, 1912, gives a more readable account of the fundamental principle than the more involved *Traité de l'enchaînement des idées fondamentales*, edited by Lévy-Bruhl, Paris, 1922.

mathematical probability. I shall try to show that what is called induction, the 'inverse' process of reasoning by which we pass from particular cases to the principle or from the effect to the cause, is primarily a matter of such a judgment of probability. Its procedure is tentative and speculative and it is theoretically incapable of certainty, but in a certain sense it is more fundamental than deductive reasoning, since induction must supply the premises for deduction.

The stock example of an hypothesis chosen on grounds of greater simplicity is the system of Copernican astronomy. It is frequently suggested that the sole superiority of the Copernican system lies in the greater ease which it brings into the calculations of the astronomer. It is said that since motion is relative the Ptolemaic and Copernican systems are intrinsically equally true and equally false and that the choice between them can only be made upon what are called 'pragmatic' grounds. This account, however, does not do full justice to the actual facts of the history of science. The change introduced by Copernicus was regarded by him and by the world at large as a real and significant change, not as a mere mathematical shift of frame of reference. The arguments by which Copernicus supports the new astronomy in the *De orbium cælestium revolutionibus* do not claim merely a higher degree of descriptive simplicity, but rather a higher degree of probability for the new hypothesis.[2] The underlying assumption is that the world is a rational or reasonable system in which some relations are more probable than others. It is clear also that the Copernican argument rests on a consideration of the *causes* of the apparent motions of the heavenly bodies. We have to assume less in the way of forces if we assume the rotation of the earth than if we assume a daily revolution of all the heavenly bodies. When we pass from description to explanation we see that it is

[2] No emphasis can be placed upon any one passage, especially since the arguments of Copernicus are complicated and confused by a false dynamics, but the following passage, quoted as the words of Copernicus himself, by Sedgwick and Tyler, *Short History of Science*, 1917, is not without significance: "It is more probable that the earth turns about its axis than that the planets at their various distances, the comets sweeping through space, and the endless multitude of the fixed stars, describe the same regular daily motion about the earth" (p. 197). *Cf. History of Planetary Systems from Thales to Kepler*, Dreyer, J. L. E., Cambridge University Press, 1906, esp. p. 313.

easier, that is, imposes less of a 'strain on the imagination,' as we say, to regard the earth as rotating on its axis than to assume many causes all working together to produce a daily revolution of all the heavenly bodies. In fact this more complex hypothesis can only find admittance by again reducing all the causes to one in the form of a divine creative mind. The question is not merely one of ease of description but rather of what we may call ease of belief, that is, inherent plausibility or reasonableness.

I believe that it can be shown that in all our inductive and analogical inferences we are appealing to this regulative idea of a cosmos. Wherever we have a consilience of evidence, a number of facts which can be explained by a single assumption, the logic of inductive reason obliges us to accept this assumption as probable. Where many facts can be explained by some simple assumption we say that it ascribes too much to chance to deny the assumption. The logic of circumstantial evidence illustrates the point perfectly. Two or more essays or examination-books, which happen to be identical, may have been independently produced; but the logic of probability forbids us to consider this hypothesis. In general, we may say, the identity of the effect implies identity of the cause for probable reason, although the fact of a possible plurality of causes forbids any such inference in formal logic. The most comprehensive instance of inference from identity of the effect to identity of the cause is presumably found in the theory of evolution which reasons from the similarity of the many animal forms to their common origin. Or, to choose an example which is perhaps too suggestive of class-room activities, we may imagine the situation of a professor, who should find, some bright morning, no members of his class present. Any one of the students might be absent for reasons known to himself and concerning himself alone, and in fact these private reasons account for ordinary irregularities of attendance. It is theoretically possible that by a remarkable co-incidence, as we call it, all the members of a large class might be absent on any given morning for such private reasons, but we naturally grant this hypothesis only a low degree of probability. It is much more likely that there is some common cause at work, such as a football victory, a holiday, or a breakdown of the local transportation system. I believe that this simple

case illustrates perfectly the fundamental principles involved in the selection of hypotheses in probable reasoning and that it is strictly analogous, to revert to our former instance, to the situation in which Copernicus found himself when confronted with the two systems of the world.

The point is that even when a choice between hypotheses cannot be made on grounds of strict logical necessity it may still be an expression of reason, and in fact of reason in a profounder sense in which reason is opposed to mere understanding and formal logic. This contention can itself be supported by an analogy. In the mathematical treatment of probability there are certain cases in which the process can be worked out mathematically in either direction, that is, either deductively, from the hypothesis to the event or facts, or inductively, from the event or facts to the hypothesis. Consider the following instance: If I know that there are four balls in an urn and that the observed event is that in four drawings three white balls and one black ball have been drawn, the balls being replaced after each drawing, it is easy to calculate mathematically the respective probability of the three possible hypotheses as to the contents of the urn. The contents of the urn are either three white balls and one black, two white balls and two black, or one white and three black balls. The axiom involved is that among hypotheses equally probable the probability of the hypothesis from the event is proportional to the probability of the event from the hypothesis. That hypothesis which renders the observed fact most probable is itself most probably true. In this case the three hypotheses are of equal complexity and no use of the law of parsimony is made. The point on which I would lay stress here is that we are able roughly to guess the relative probability of the three hypotheses prior to actual calculation. Common sense, that is, the vague qualitative estimation of probabilities is able to anticipate the result of the calculation. In such a case we do not suppose that we are guided by anything else than reason. Would it not seem then that in the other case in which we judge concerning the probable, we are likewise guided by reason, although, to be sure, by a reason less akin to the mathematical? Our decision in favor of the Copernican system is not merely a case of an inexact, imperfectly mathematical, guess; but it illus-

trates what we may call philosophical probability. It is true that the evidence is now overwhelmingly in favor of the Copernican system and that there is an air of pedantry in calling it merely probable. In other cases the evidence will be more equally balanced and we may find certain irremovable differences of opinion just as in the case of the comparison of two works of art with regard to æsthetic value. Perhaps the great hypotheses of metaphysics are to be regarded as cases in which there is something of a balance of evidence and an inevitable appeal to an individual judgment which cannot be coerced by any decisive syllogism or proof.

The probabilistic theory of induction, which I have been suggesting, does not involve the consequence that there is nothing certain. It does not exclude the possibility that there may be an absolutely certain perception of particular existences. There may also be such things as apodictic universal truths. We may appeal to the classic doctrine of Locke to the effect that all certainty, save the perception of individual existences, resides in what Locke calls connection of our own ideas.[3] That is, certainty, as far as general propositions are concerned, is found only in the hypothetical connections of universals. Under this head we would consider the truths of mathematics and formal logic, as well as the eidetic insights of Husserl, which seem not wholly dissimilar to what Locke called, no doubt unjustly, "trifling propositions." These propositions are certain but they do not have a positive existential reference; they tell us nothing of an affirmative character about the real. It is true that they all have, as Royce pointed out, a negative existential reference, in that they exclude from existence all that conflicts with them. The real must conform to our self-evident insights, but this conformity is purely negative and tells us nothing of the detailed character of the real. We must

[3] Locke's theory of mathematics, developed in Book IV of the *Essay*, rather clearly implies that Locke's "ideas" are, after all, not so much particular psychic existents as universals, Platonic essences.—The most difficult "certain universal" to bring under Locke's great principle of the non-existential character of apodictic generalities is the uniformity of nature. If we admit that lawfulness is part of the criterion of physical reality, it would seem as if in this one case an ideal connection determined what was real and what was not. But this subject deserves a separate paper.

not forget the great doctrine of the British empiricists from Bacon on down, which may be summed up in the phrase: the positivity of the laws of nature. The laws of nature are not ideal truths but are weighted with existential import; they are hence in the last analysis purely factual, devoid of rational necessity, that is to say, positive. Since the laws of nature are universal propositions with existential import they cannot be more than probable. The outcome is that all universal propositions are either hypothetical or problematic. They are hypothetical if they express a 'relation of ideas'; they are problematic if they attempt to assert something of the real. It thus appears that reality or existence in logic is characterized precisely by its problematic character.

The process by which we gain the problematic universals of natural science is what we mean by induction. For the sake of clarity we can distinguish three principles or presuppositions of reasoning in general. The first is the formal law of non-contradiction or consistency. This is the fundamental principle of formal logic and the negative condition of all truth and all reality. The second is the principle of the uniformity of nature, which may be summarily expressed in the phrase, 'Same Cause, Same Effect.' This principle merely asserts that natural processes always take place according to fixed laws. It merely applies the principle of identity to the temporal flux, asserting that the same cause combined with the same circumstances, must always give rise to the same effect. But it is the third principle on which I wish primarily to lay stress. This is the principle to which I referred above as the principle of the 'harmony of the world.' It asserts that nature is essentially a simple system, that phenomena are not only under laws but are under a small number of laws. It is clear that this principle, abstractly stated, carries little or no immediate self-evidence with it, and that while non-contradiction and the uniformity of nature seem mere truisms, the principle of cosmic harmony seems at first glance hardly true at all. We are only too familiar with the process by which a prematurely assumed simplicity is obliged to give way before the complexity of reality. It has been well said that we must seek simplicity, yet beware of it. The suggestion that a parsimonious or economical outlay of thought is the best way to cope with reality seems hardly worth discussing.

In our perplexity we may note the formulation given the principle by Newton and Kant. The *regulæ philosophandi* of Newton state our principle with great definiteness: "We should not assume more causes than are sufficient and necessary for the explanation of the observed facts. Hence as far as possible, similar effects are to be assigned to the same cause; for instance, the fall of stones in Europe and America."[4] The basis of these rules is evidently contained in the following familiar passage: "Nature does nothing in vain, and more is in vain when less will serve; for nature is pleased with simplicity and affects not the pomp of superfluous causes." (*Principia*, Bk. III.) The methodological maxim of parsimony pointed back to a teleological order of nature, which Newton, no doubt, interpreted in a dogmatic theological fashion. It seems to be the same principle, however, which forced Kant on from the abstract principle of causation of the *Critique of Pure Reason* to the notion of a regulative use of the idea of teleology in the *Critique of Judgment*. The real meaning of Kant's theory of cosmic teleology, as opposed to mere biological teleology, seems to be that we must proceed in science as if nature were the product of a designing intelligence. Such a creative intelligence would choose to accomplish the greatest possible effects by the least possible means. Kant's general intention was, as is well known, to transform the metaphysical into the methodological, and the older doctrine of an actual creating and designing mind becomes in his hands a mere fictionalistic *as-if* doctrine to the effect that we are to proceed in science *as if* nature were the work of such a mind. The doctrine of cosmic teleology, in short, is simply the methodological principle of choosing those hypotheses which explain the largest number of facts with the smallest number of assumptions, that is to say, of proceeding under the guidance of what I call the regulative idea of a cosmos.

It thus appears that inductive science rests upon an assumption which goes far beyond the mechanistic uniformity of Mill's *Logic*. This assumption, however, is more than a mere principle of simplicity or of parsimony. Nature we may say is infinitely

[4] These rules were added in the second edition of the *Principia*, Bk. III. There is an excellent discussion of them in Whewell, *The Philosophy of the Inductive Sciences*, London, 1847, Vol. II, p. 274 ff.

prodigal in types of being and concrete individuals, as well as unified in principle. Harmony is unity in variety and the regulative idea of a cosmos must be conceived so as to provide for the differentiation and individuation of the real as well as its simplicity. We may again refer to Kant. This philosopher recognizes a principle of specification and a principle of continuity as well as a principle of homogeneity. The idea of a rational harmony, we may say, implies not only simplicity but also variety and continuity, and it not only tells us to accept the simplest hypothesis which will explain the facts, but also that any given hypothesis will probably not do justice to the infinite richness of reality. When Kepler joined the disconnected observations of Tycho de Brahe with the elliptical orbit there were an infinite number of other lines which might have connected the observed appearances just as well. But for the same reason that Copernicus accepted the circular orbits, Kepler chose the ellipse as the simplest possible hypothesis in accordance with the facts. It is again the same reason which obliged Newton to accept the law of the square of the distance and the product of the masses. This is the simplest formula from which the motions of the moon relatively to the earth and of the planets relatively to the sun, as described by Kepler, can be deduced. It is true that the conception of the harmony of the universe functions, in Kantian language, as a regulative, not as a constitutive principle. Thus the simplicity which we grasp at any given stage is sure to give way before a closer scrutiny of the facts. Given such facts, that principle which introduces the greatest amount of unity and order into them is the most probable. But no formulation in science is final; the circles of Copernicus must give way to the ellipses of Kepler and the elliptical orbits must admit of perturbations to maintain the more inclusive harmony and simplicity of the Newtonian law. It now appears that the Newtonian formula must itself be abandoned for the sake of the higher mathematical intelligibility of the theory of relativity. At each stage the simplest hypothesis is the most probable of those offered, but it is practically certain that any given formula will have to be abandoned in the light of new facts for the sake of a more inclusive harmony and a deeper simplicity.

WILLIAM CURTIS SWABEY.

NEW YORK UNIVERSITY.

PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL ASSOCIATION, 1928

SECOND ANNUAL REPORT OF THE BOARD OF OFFICERS

To the Members:

The Organizing Committee of the Sixth International Congress reports as follows:

1. As reported to the Association in December 1927, there remained on November 17, 1927 a balance of $1,270.87 in the hands of the Treasurer, Professor John J. Coss, Columbia University. Since that date, $687.52 have been received as profit from the sale of the Proceedings of the Congress. The total now on hand is therefore $1,958.39.

2. This sum will be increased by interest accruing at the savings bank, and, possibly, by further receipts from the publishers of the Proceedings. This last item, however, can not be reckoned on in advance.

3. The Committee recommends that this surplus from the Sixth International Congress be used to promote the representation of the Association at the Seventh Congress, to be held at Oxford, England, in 1930.

A. C. Armstrong, *Honorary Secretary.*

The Revolving Fund for Publication:

By vote of the Board of Officers, the secretary was instructed to deposit the fund received from the Carnegie Corporation in a savings bank where it would yield some interest while being used. It is deposited in the First National Bank of Eugene, Oregon, where it bears 3 per cent. on the unpaid balance semi-annually. The financial statement appears below.

Under the date of February 2, 1928, J. McKeen Cattell withdrew from the Publication Committee and no one has been appointed in his stead.

The general editor of the Source Books in the History of the Sciences submits the following report:

This project has progressed satisfactorily during the past year. Early in the spring, the McGraw-Hill Book Company of New York

City showed interest in the venture, and by mid-summer signed the contract for the entire series. The terms, too, are such that the fund obtained from the Carnegie Corporation is left free for the preparation of manuscripts.

Two chairmen of committees, Professors Chamberlin and Ames, because of the pressure of other duties, have resigned their positions, but both have retained their connection with the enterprise by becoming members of reviewing committees for their respective fields. Steps are being taken to fill these two important positions.

Professor Henry Crew of Northwestern University has been secured to act on a reviewing committee for the volume on physics, and Professor William M. Wheeler, dean of the Bussey Institute, Boston, Massachusetts, has consented to survey the field of biology to determine the number of volumes necessary to cover that subject. Such assistance will aid the project very materially.

During the year, the project has been indorsed by the American Association for the Advancement of Science and the History of Science Society; and also by the American Anthropological Association, the Mathematical Association of America, and the American Astronomical Society within the limits of their respective fields.

The first volume, *A Source Book in Astronomy,* by Professor Harlow Shapley has just come from the press, and the second volume, *A Source Book in Mathematics,* under the immediate supervision of Professor David Eugene Smith, is under way and will probably be ready for the press early this coming year.

Since the McGraw-Hill Book Company is desirous of having three or four manuscripts a year, it is likely that the entire series will be ready for distribution much earlier than was at first anticipated. The eager activity of the several committees, commensurate with sound scholarship, will accomplish this result.

GREGORY D. WALCOTT, *General Editor.*

CARUS LECTURES:

The Committee on the Carus Lectures reports that the three members of the committee who were to be appointed by Mrs. Carus are E. L. Schaub (Chairman), H. B. Alexander, and Mrs. Mary Hegeler Carus. Professor George H. Mead has been chosen by the committee to deliver the third series of lectures. The time and place has been left to a committee consisting of the lecturer, a representative of the Department of Philosophy at the University of California, and H. B. Alexander.

AMERICAN COUNCIL OF LEARNED SOCIETIES:

The Fourth Conference of the Secretaries of the Constituent Societies was held in January 1928, in Washington, D. C. The Association was represented by Brand Blanshard, Secretary-Treasurer of the Eastern Division. Bulletin No. 9 published by the Council gives a report of its activities from its organization until December 1928. Among many items of interest to the members of our Association are (1) the report of progress in the publication of the Dictionary of American Biography, (2) the appointment by the Council of Professor William A. Heidel as a Research Associate with full financial provision for the completion of his studies in the History of Greek Scientific and Philosophical Thought to 400 B.C., (3) the establishment of small grants in aid of research. Of the third item the announcement is printed in full.

The American Council of Learned Societies announces that it is able to offer, in each of the three years 1929–1931, a limited number of small grants to individual scholars to assist them in carrying on definite projects of research in the humanistic sciences (philosophy, philology and literature, linguistics, art and archæology, and history).

The grants are designed to facilitate and encourage research by mature scholars who are engaged in constructive projects of research, and who are in actual need of such aid and unable to obtain it from other sources. The grants are available for specific purposes, such as travel, personal and secretarial assistance, the preparation or purchase of equipment, material, etc.

The grants are restricted to scholars who are citizens of the United States or who are permanently domiciled or employed therein. They will not be awarded for the purpose of aiding in the fulfillment of the requirements for any academic degree, and as a rule, preference in their award will be given to scholars who lack access to other funds maintained for similar purposes.

The maximum amount of these grants is $300. Applications for grants to be awarded in 1929 must be made not later than January 31. Information respecting mode of application, etc., will be furnished upon request to Waldo G. Leland, Permanent Secretary of the American Council of Learned Societies, 907 Fifteenth Street, Washington, D. C.

BERKELEY ANNIVERSARY:

Professor C. M. Bakewell reported for the committee appointed to coöperate with the Berkeley Divinity School in arranging a com-

memoration of the 200th aniversary of the arrival in this country of Bishop Berkeley. Professor Bakewell was chosen to represent the Association at the commemoration exercises.

OFFICERS FOR 1929:

The Board of Officers for 1929 is as follows: Morris R. Cohen, *Chairman,* D. H. Parker, H. B. Alexander, Brand Blanshard, T. V. Smith, H. D. Roelofs, and H. G. Townsend, *Secretary.*

BOARD OF OFFICERS: H. WILDON CARR, *Chairman,*
FELIX ADLER,
D. H. PARKER,
R. M. BLAKE,
T. V. SMITH,
H. G. TOWNSEND, *Secretary.*

FINANCIAL STATEMENT.

January 8, 1929.

Board of Officers,
American Philosophical Association,
Mr. H. G. Townsend, *Secretary,*
Eugene, Oregon.

Gentlemen:

In accordance with instructions received we have examined the cash records of the American Philosophical Association at Eugene, Oregon, for the year ended December 31, 1928, and submit herewith statements of cash receipts and disbursements of the General Treasury and of the Revolving Fund for Publication.

We have verified the balances of cash on hand by certificates obtained from the respective depositories, have examined all of the checks returned, and have inspected receipted invoices produced in support of all disbursements. Cash receipts are in agreement with remittance advices in the files of your secretary.

I CERTIFY THAT, in my opinion, the accompanying statements of cash receipts and disbursements of the General Treasury and the Revolving Fund for Publication of the American Philosophical Association have been correctly prepared to reflect the cash position of the Association at December 31, 1928.

Yours very truly,
SPENCER R. COLLINS,
Certified Public Accountant.

AMERICAN PHILOSOPHICAL ASSOCIATION.

Cash Statement, General Treasury, for Year Ended December 31, 1928.

Balance—January 1, 1928			$ 104.50
Receipts:			
Dues in American Council of Learned Societies—			
Eastern Division	$ 15.45		
Western Division	7.18		
Pacific Division	2.37	$ 25.00	
For General Treasury—			
Eastern Division	75.25		
Western Division	36.50		
Pacific Division	12.50	124.25	
For Printing the Annual Report—			
Eastern Division	78.26		
Western Division	16.61		
Pacific Division	13.00	107.87	
One half of delegate's expenses from American Council of Learned Societies		20.00	277.12
			$ 381.62
Disbursements:			
Dues in American Council of Learned Societies	$ 25.00		
Stationery, Postage, Clerical Labor	17.22		
Expenses of delegate to American Council of Learned Societies (William A. Hammond)	40.00		
Printing the Annual Report	126.71		208.93
Balance, December 31, 1928 (United States National Bank—Eugene, Oregon)			$ 172.69

Cash Statement, Revolving Fund for Publication, for Year Ended December 31, 1928.

Receipts:		
Carnegie Corporation of New York	$10,000.00	
Interest—March 5 to June 30, 1928	87.75	
Interest—July 1 to December 31, 1928 (Credited by Bank as of January 1, 1929)	126.93	$10,214.68
Disbursements:		
Gregory D. Walcott	125.00	
Harlow Shapley	700.00	
Harlow Shapley	800.00	1,625.00
Balance, December 31, 1928 (Savings Department, First National Bank, Eugene, Oregon)		$ 8,589.68

WESTERN DIVISION

President: D. H. PARKER.
Vice-President: J. D. STOOPS.
Secretary-Treasurer: T. V. SMITH.
Executive Committee: The foregoing officers *ex-officio*, together with A. P. BROGAN, G. P. CONGER, B. A. G. FULLER, and W. S. GAMMERTSFELDER.

The twenty-ninth annual meeting of the Western Division of the American Philosophical Association was held at Chicago, in connection with the meeting of the American Philosophical Association for the Second Series of the Carus Lectures, December 27–30, 1927. The Western Division was represented on the general program of the national association as follows:

Objective Certainty and Human Faith (Presidential Address) ..... DAVID SWENSON
An Hypothesis of Realms ..... G. P. CONGER
Current Epistemology and Contemporary Ethics ..... D. LUTHER EVANS
Hedonism and Comparative Values ..... A. P. BROGAN
The Regulative Idea of a Cosmos ..... W. CURTIS SWABEY
The Search for Certainty ..... LAWSON P. CHAMBERS
Theses Concerning the Foundations of Logic ..... MARVIN FARBER
Art and Life ..... VAN METER AMES
What Has Beauty to do with Art? ..... C. J. DUCASSE
Sense Qualities and Material Things ..... STERLING P. LAMPRECHT

At the business meeting, a vote of thanks was tendered Professor D. T. Howard, Northwestern University, for his efficient work as temporary secretary-treasurer of the Western Division in organizing the joint meetings of the three divisions during the absence of the secretary-treasurer in Europe. It was decided that the next meeting would be held at Easter, 1929, the exact dates and place to be determined by the Executive Committee, note being taken of invitations from Ohio State University and the University of Cincinnati. It was recommended also that hereafter all material necessary for making up the program of the Western Division be in the hands of the Secretary at least six weeks before the date of the annual meeting and that the printed programs be mailed by him to members at least two weeks before the date of the meeting.

The following officers were elected: President, D. H. Parker; Vice-President, J. D. Stoops; Secretary-Treasurer, T. V. Smith; Members

of the Executive Committee, A. P. Brogan, G. P. Conger, B. A. G. Fuller, and W. S. Gammertsfelder.

The following new members were elected: A. E. Brown, Frank Diehl, Vergilius Ferm, D. W. Gotshalk, Carrol D. Hildebrand, W. M. Horton, J. A. Melrose, W. A. Shimer, R. A. Tsanoff, Ethel K. Yeaton.

T. V. SMITH, *Secretary-Treasurer.*

PACIFIC DIVISION

President: H. B. ALEXANDER.
Vice-President: D. W. PRALL.
Secretary-Treasurer: H. D. ROELOFS.
Executive Committee: The foregoing officers *ex-officio,* together with D. S. MACKAY (1930), R. M. BLAKE (1930), H. G. TOWNSEND (1929), H. WILDON CARR *ex-officio* for one year.

The fifth annual meeting of the Pacific Division was held at Stanford University November 30 and December 1, 1928. The following program was presented:

Logic in Rhythmitonal Creative Processes.....H. P. EAMES
The Disintegration of Integrals.....H. LANZ
The Persistent Motive for Social Organization.....H. G. TOWNSEND
A Symposium on Determinism and Indeterminism:
In Classical Physics.....V. F. LENZEN
In Quantum Physics.....W. H. WILLIAMS
The Presidential Address: Real and Ideal Relations..H. WILDON CARR
Cosmology in Plato's Thought.....J. E. BOODIN
The Naturalism of Hume..... H. MILLER
Problems of a Philosophy of Culture.....J. A. LEIGHTON

At the business meeting December 1, the minutes of the last meeting were approved.

TREASURER'S REPORT.

Receipts.

Balance on hand November 25, 1927	$101.58	
Membership dues	70.00	
Total		$171.58

Expenditures.

Postage and stationery	$ 5.20
Secretarial work	2.00
Mimeographing of announcements for 1927 and 1928 meetings	3.53
Printing of announcements and programs for 1927 meeting	8.00

Pacific Division share in expenses of Joint Meeting of the American Philosophical Association	33.84	
Pacific Division share in expenses of printing Proceedings of the American Philosophical Association	13.00	
Pacific Division dues to American Philosophical Association	12.50	
Pacific Division share in membership of the American Philosophical Association in the American Council of Learned Societies	2.37	
Total	$80.44	
Balance on hand November 30, 1928		$ 91.14

The Executive Committee reported that it had accepted the invitation of Mills College to hold the annual meeting there in 1929. It was moved, seconded and carried that this action be referred back to the Committee for reconsideration.

On recommendation of the Committee it was voted to hold the next annual meeting at the time of the Christmas holidays.

The following were elected to membership: H. P. Eames, Francis Raymond Iredel, Elmo A. Robinson; and to associate membership, Dr. William Maxwell.

The following officers were elected: President, H. B. Alexander; Vice-President, D. W. Prall; Secretary-Treasurer, H. D. Roelofs; Executive Committee, D. S. Mackay, R. M. Blake.

The Executive Committee recommended that steps be taken for the publication in the annual volume of Proceedings and Addresses of selected papers presented at the divisional meetings. Action was deferred until the next regular meeting.

A rising vote of appreciation and thanks was recorded for the hospitality of Stanford University and its department of philosophy.

H. D. ROELOFS, *Acting Secretary-Treasurer.*

EASTERN DIVISION

President: MORRIS R. COHEN.

Vice-President: E. G. SPAULDING.

Secretary-Treasurer: BRAND BLANSHARD.

pro tem. CHARLES W. HENDEL.

Executive Committee: The foregoing officers *ex-officio* together with H. R. SMART (1929), R. C. LODGE (1930), GRACE A. DELAGUNA (1930), W. K. WRIGHT (1931), C. A. BENNETT (1931), FELIX ADLER, *ex-officio* for one year.

Nominating Committee: CHARLES M. BAKEWELL, *Chairman,* F. J. E. WOODBRIDGE, FRANK THILLY.

The twenty-eighth annual meeting of the Division was held in Philadelphia, December 27–29, 1928. The following program was presented:

On a Definition of Consciousness.....Edgar A. Singer, Jr.
Social Meaning and the Concept of Society.....Clifford L. Barrett
Toward a Metaphysic of Literary Criticism.Philip E. Wheelwright
The Creative Imagination.....Morris R. Cohen
Symposium: In what sense and to what extent does religious experience afford knowledge?—James Bissett Pratt, James H. Leuba, Edgar S. Brightman, W. P. Montague
Alternative Systems of Logic.....Paul Weiss
Is Mathematics a Deductive Science?.....Harold R. Smart
The Next Step in the Epistemological Dialectic
Douglas C. Macintosh
A Re-examination of Critical Realism.....Roy Wood Sellars
Presidential Address, The Ethical Problem.....Felix Adler
Discussion: Are there any necessary truths?
E. G. Spaulding, Wilmon H. Sheldon

The business meeting was called to order at 9:45 A.M., on December 29th by President Adler. The minutes of the 27th annual meeting were approved as printed.

Treasurer's Report. The treasurer's report as audited and approved by the auditing committee, was read and accepted. The statement follows:

Receipts.

Balance brought forward	$1,059.33	
Membership dues	548.10	
Gift, C. A. Strong	100.00	
Total		$1,707.43

Expenditures.

Expenses, Chicago meeting	$ 178.84	
Clerical Assistance	12.57	
Printing of Annual Volume	78.26	
Printing Announcements, Stationery, Postage	83.03	
Dues of Division to American Phil. Association	75.25	
Dues of Division to A. C. L. S.	15.45	
Refund of Dues	1.00	
Total		$ 444.40
Balance on hand		$1,263.03

Audited by { E. B. Crooks
Maurice Picard

Committee on Contemporary American Philosophy. For the Committee on Contemporary American Philosophy, Professor W. P. Montague reported that, with a few exceptions, the contributors to the two volumes of essays proposed by the Committee had all submitted their manuscripts; that arrangements had been made for publication of the volumes by Messrs. Macmillan in the Library of Philosophy series; and that their appearance was anticipated at an early date.

Harry Norman Gardiner. It was unanimously voted that the following minute in memory of Professor H. N. Gardiner be spread upon the records of the Association:

In the death of Professor Harry Norman Gardiner on December 29, 1927, the American Philosophical Association lost not only a loyal and devoted member but also one whose life had been built into its very structure.

Professor Gardiner was one of the original founders of the American Philosophical Association. He was elected its first secretary and treasurer, and served for a number of years in this capacity. His keen interest in its welfare, his discriminating judgment, and his skill in the organization of meetings played an important part in determining its character and usefulness. He rarely missed a meeting, and never failed to take an active part in the discussions. It was always a source of joy to hear him speak. His beautifully modulated voice, his perfect diction, his never failing urbanity, yet the clearness and sureness with which he would cut through to the root of the matter, set a high standard of excellence and saved many a discussion from being lost in futility and irrelevancy.

At the meeting held at Smith College in December, 1925, the Association celebrated its twenty-fifth anniversary, and Professor Gardiner read a paper on its history, notable for the interest of the record and for the skill with which it was presented.

Professor Gardiner was president of the Association in 1907, and his presidential address on "The Problem of Truth" was an unusually keen analysis of the problem, stated in terms partly suggested by the work of Meinong.

His most significant contribution to historical criticism consists of two articles published in 1918 and 1919 on the psychology of the feelings and the emotions in ancient philosophy, which constitute one of the most important contributions made to the interpretation of this phase of ancient thought. He had, also, through years of study, made himself an authority on Jonathan Edwards, whom he placed in the front rank of American philosophers.

It is difficult to appraise his influence upon philosophy in America. Certain it is that it is not to be measured by the relatively meagre amount of his published work, nor was it wholly or mainly due to his writings. He lived in the lives of his students and of his friends and associates, and in the causes to which he gave devoted service.

After all, philosophy's task, as he viewed it, was not primarily to add to truth—that is the work of science—but rather to provide a discipline that enables one to enter into the spirit of civilization as this has found expression in the great cultural achievements of man, in literature, in art and in religion,

and in the story of philosophy itself. In short, for him, as for his teacher Plato, philosophy was not so much a theory of reality as a way of life, its study a conversion, a turning of the soul toward the light.

Of philosophy as thus conceived Professor Gardiner's own life was an impressive illustration.

Nominating Committee. The committee reported the following nominations for office in the Division for the year 1929:

For President, Morris R. Cohen.

For Vice-President, Edward G. Spaulding.

For new members of the Executive Committee, W. K. Wright, C. A. Bennett.

The Secretary was instructed to cast a unanimous ballot for the nominees presented.

Life Member. Under the head of new business, it was moved and carried that, in recognition of the gift to the Association of one hundred dollars by Professor C. A. Strong, he be elected to life membership in the Association, such membership to be indicated by the entry, 'life member,' after his name in the roll of active members.

Committee on Sixth International Congress. Upon presentation by the Secretary of the report made by the Organizing Committee of the Sixth International Congress of Philosophy to the Board of Officers of the Association, a report which showed a balance of $1,958.39 now in the hands of the committee, it was voted that the following recommendations should be made to the Board of Officers: That a committee should be appointed to represent the Association in administering this fund in the interest of the Seventh International Congress; and that, in view of the great value of their services to the last Congress, Professors J. J. Coss and A. C. Armstrong should be among the members of this committee.

Publicity. The action of the Executive Committee in temporarily making use of the services of the Publicity Bureau established by the American Council of Learned Societies and allotting the sum of $50 annually to this Bureau in return for services rendered, was presented to the meeting and approved.

Abstracts of Papers. It was moved and carried that in preparing for the next meeting the secretary should, so far as practicable, secure abstracts of the papers to be presented and have these in mimeographed form for the convenience of members at the beginning of the meeting.

New Members. On recommendation of the Executive Committee, the following persons were elected to active membership in the Divi-

sion: Adam Alles, Boris B. Bogoslovsky, F. G. Boughton, Paul S. Christ, Francis P. Clarke, John R. Cresswell, Stephen A. Emery, F. P. Hoskyn, Gail Kennedy, Ronald B. Levinson, Leicester C. Lewis, Frank Lorimer, S. Kerby-Miller, Anna F. Liddell, Arthur E. Murphy, Frederick L. Pfeiffer, Joseph Ratner, Richard Robinson, J. K. Shryock, Philip Stanley, Paul Weiss, Mary Williamson.

Secretary Pro Tem. On recommendation of the Executive Committee, Professor Charles W. Hendel was elected Secretary *pro tem.* of the Division, to take the place of the present secretary during a year's leave of absence abroad.

Vote of Appreciation. It was moved, and carried by rising vote, "that the Association expresses its gratitude for the generous hospitality of the University of Pennsylvania, and its appreciation of the kindness and courtesy of the University staff."

BRAND BLANSHARD, *Secretary-Treasurer.*

LIST OF MEMBERS.

Members should notify the secretary of their division promptly of any changes to be made in the list of names and addresses.

Adams, Professor George, P., University of California, Berkeley, Calif.

Adler, Professor Felix, Columbia University, New York City.

Aikins, Professor H. A., Western Reserve University, Cleveland, Ohio.

Alexander, Professor H. B., Scripps College, Claremont, Calif.

Alles, Professor Adam, St. John's College, Annapolis, Md.

Ames, Professor E. S., University of Chicago, Chicago, Ill.

Ames, Professor Van Meter, University of Cincinnati, Cincinnati, Ohio.

Anderson, Professor Frederick, Stanford University, Calif.

Anderson, Professor Fulton H., Univ. of Toronto, Toronto, Canada.

Angier, Dr. R. P., Yale University, New Haven, Conn.

Apple, President Henry H., Franklin and Marshall College, Lancaster, Pa.

Armstrong, Professor A. C., Wesleyan University, Middletown, Conn.

Avey, Professor Albert E., Ohio State University, Columbus, Ohio.

Baillie, Professor John, Toronto University, Toronto, Canada.

Bakewell, Professor C. M., Yale University, New Haven, Conn.

Baldwin, Dr. J. M., c/o Harris Forbes & Co., New York City.

Balz, Professor Albert, University of Virginia, Charlottesville, Va.

Barrett, Professor Clifford L., University of California, Los Angeles, Calif.

Baylis, Mr. Charles A., Brown University, Providence, R. I.
van Becelaere, Rev. E. L., Dominican Fathers, Detroit, Michigan.
Benjamin, A. C., University of Illinois, Urbana, Ill.
Bennett, Professor C. A., Yale University, 1855 Yale Station, New Haven, Conn.
Bennion, Professor Milton, University of Utah, Salt Lake City, Utah.
Bernstein, Professor B.A., Univ. of California, Berkeley, Calif.
Birch, Professor T. Bruce, Wittenberg College, Springfield, Ohio.
Bixler, Professor Julius S., Smith College, Northampton, Mass.
Black, Dr. G. A., 156 Park Street, Gardner, Mass.
Blake, Professor R. M., University of Washington, Seattle, Wash.
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REVIEWS OF BOOKS.

The Public and Its Problems. By JOHN DEWEY. New York: Henry Holt and Company, 1927.—pp. vi, 224.

Aroused by prevailing distrust of democracy that at best leaves the public a 'phantom,' at worst an ass, John Dewey here concerns himself with the nature of the public, the genesis of the state, the means of realizing and maintaining community, and, in general, with the intrinsic value and rôle of shared experience. Since he holds in general that the reference of all intelligence is prospective, political explanations that are retrospective lack something of sagacity. Thus there goes into discard most of the political preoccupation of classical philosophy—a preoccupation that emphasized "alleged, special, original, society-making causal forces, whether instincts, fiats of will, personal, or an immanent, universal practical reason, or an indwelling, metaphysical social essence and nature." Consequences, when recognized, are causes enough,—thus intelligence is causatively enthroned in social philosophy. When the consequences of an act spill over the regulative intentions of private advantage—as they have a way of doing—they challenge general interest. The public arises in answer to this abiding and ubiquitous challenge, government is the body of officials set to guard general interests against the indirect results of private acts, and the state is the public functioning thus through its officials.

But let us make more explicit the genesis of the public and the state. We start with the interaction of man and nature and of man and man. When action becomes social interaction, it acquires the status of a *trans*-action. Natural forces catch up in their swirl the energies released by individual centers and hurl them, willy-nilly, past or through the mark intended, on to unprescribed eventuations. We sometimes, with the poet, "blunder into bliss"; and sometimes we just blunder. All men, in their turn, are innocent bystanders to the actions and interactions of one another. In such a world an animal such as man remains permanently a bystander; but he need not remain permanently innocent. Indeed the loss of innocence marks the second stage in state-formation. Recognizing himself as potentially affected by all the actions that go on around him and differentially assessing his experiences, man sets about effectively to prefer the good, effectively to defer the bad consequences. Common effects beget common concern,

and communities arise to memorialize and make effective the recognition. Insofar as all men (inside whatever limit) are affected through consequences unguarded, often unforseen, by those who initiate them, a general community arises with the recognition of the fact. But it is so far merely a community of understanding. Its metamorphosis into a community of action marks the third stage. The media of its action are other individuals set apart as officials to represent the public in maximizing the good and in minimizing the bad indirect consequences that flow from individuals, whether they be acting in private capacity or as members of groups smaller than the larger community.

So far we have a utilitarian interpretation of social life. It is indeed obvious throughout his present analysis and his general philosophy how much Dewey owes to the utilitarians. But there remains a fourth stage by emphasis of which Dewey supplements utilitarianism where it is weak. And this is the notion that while community arises out of the necessity of controlling for preferred ends the indirect consequences of all activity, it remains to perpetuate itself as an intrinsic good. Worse than all the injurious consequences that effective action prevents would be the absence of the community of action itself; better than all the extraneous benefits that flow from united action is the experience of unity itself. Indeed it is because man naturally experiences this spiritual fruit of common action in seeking direct consequences that he is led to quest through ever larger organizations for control over indirect consequences.

If in the preceding account the ideal and the real are inextricably mixed, it is because they stand thus related in actual social experience. The fact that they are mixed and are further mixable is the logical ground for ethical meliorism. Dewey's social philosophy is a hopeful one, because the process of improvement is always but a further application of the process of initiation. Any state has in it the seeds of a democratic state; for every state rests upon the notion of a common good to be guarded and furthered through some official means. To become democratic a state needs only to increase to all as a limit a recognition of the consequences that constitute the realm of otherwise unsupervised goods and bads and then improve the human administration of this moral economy. No negligible condition, the critic may justly remark.

Cautious as Dewey himself is, there is reason to suspect that humanistic if not lingering idealistic elements in his general philosophy do not permit him to face all the difficulties realistically. Certainly, however, the conditions of a democratic polity as he formulates them

are exacting enough so far as the human element goes: full publicity for all relevant consequences, an experimental attitude in all human concerns, a growing body of available social knowledge, and a recovery by face-to-face groupings of the prestige and efficacy lost to them in this machine age.

But it must be clear upon reflection that these conditions imply much more than the mere will to be free. Man, the unsocial social animal, is recalcitrant enough; nature is worse. Publicity, recognition—all such concepts, as here used, imply prior knowledge. Democracy, as Dewey recognizes, implies science; and the limits of natural science, as he does not seem always to keep in mind in this present discussion, mark the boundaries of democratic aspiration. Democracy may not indeed exploit all the fields that science orders and offers; but it cannot exploit more. Now the world with which natural science deals is a very realistic world: will counts for little, wit for a little. The cosmic weather remains an inexorable item for social philosophy. Only those who make nature pliable by importing into it a larger element of human rationality than the facts warrant can feel that good will offers any adequate ground for democratic optimism. If one discovers in the attic of life that the real and the rational are coextensive or in the basement of life that experience and nature are one (each inter-constitutive or jointly constituted), he lays a ground for larger hope; but it is to be feared also that he discovers a great deal more than any ordinary democrat can ever find by eschewing basements and attics alike and remaining observant on the ground floor of his modest empirical habitat. It is fairly certain that the only way men will ever get anything like all they want, in social organization as elsewhere, is to take a liberal lesson in wanting what they will eventually get. The moral of these remarks with respect to democracy is that fraternity rather than liberty is the cardinal virtue. Insofar as community comes to be its own reward good will promises democratic fruition. This Dewey heavily emphasizes.

But if this disclaimer must be made to what the present reviewer feels to be the metaphysical drift of both Dewey's recent books, let it be said in conclusion that the instrumental logic and the pragmatic ethics remain the bulwark of any democratic hope. Not merely as a plea but as a program this book is magnificent. Forgetting insights and excellencies that alone would be enough to distinguish lesser works, this book has one high and rare virtue: it analyzes and defines and criticizes political philosophy in such a way as to leave disclosed important next steps for practice. If all these indicated steps do not

take us to the very threshold of heaven, let us praise the will of the author and blame the wit of nature. For if the method here outlined and prescribed does not get us to Utopia, where is there another method that will get us even out of our own backyard?

T. V. SMITH.

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A Study of Gersonides in his Proper Perspective. By NINA H. ADLERBLUM. New York, Columbia University Press, 1926.

The author justifies a fresh study of Gersonides by the need of an approach to this distinguished thinker from a new point of view. Her work would indeed have had a distinct value aside from this peculiar angle of vision. For she gives evidence of an extensive firsthand acquaintance with medieval Jewish thought, a rare capacity for analyzing and appreciating its typical concepts, and a remarkable independence of judgment. Among Jewish philosophers Gersonides deservedly holds a very high rank. Like Solomon Ibn Gabirol, Abraham Ibn Ezra, Maimonides, Crescas, and others, he allowed himself great freedom in meditating on problems of thought that had not before their time been so distinctly and consciously present to the Jewish mind. Like them, he was deeply influenced by what the Middle Ages knew of Aristotle, and especially was his thinking affected by the interpretation of Aristotle by Averroës. Levi ben Gershom, or Gersonides, was born in Bagnols in 1288 and died in Perpignan in 1344. His chief works were written between 1319 and 1329. Consequently he lived in the period of scholasticism. Characteristic of this movement was the attempt to reconcile the essential elements of Aristotelian philosophy with the revelation recorded in the Jewish Scriptures, the Koran, or the Christian Bible, with the authority of tradition and established theological doctrines. The interest of students in the fresh hold of classical antiquity, and particularly of Greek thought, upon the new European nations has naturally been very intense. It may indeed be questioned whether it has yet been powerful enough to lead to a full realization of the vast amount of Hellenism that still survived in Jewry, in the Mohammedan world, and in the Church for centuries before the outblossoming of the Renaissance. But this dominating concern about the precise degree in which the leading Jewish, Muslim, and Christian thinkers were affected by Greek thought may very well have had a tendency to obscure and to crowd into the background other elements in their thinking worthy of consideration.

It is the contention of the author that this has been the case with

Gersonides. Too much has been made of his indebtedness, which of course is not questioned, to Averroës, and therefore to Aristotle; too much even of his views concerning creation, miracles, prophecy, immortality, the Active Intellect, and other subjects, often more advanced and more openly avowed than those of Maimonides and Crescas, not to speak of Ibn Ezra. Mrs. Adlerblum urges the need of a new perspective. His attitude towards the historic background, the tradition, the law, the land, the heritage and function of his people should be considered. In this respect he invites comparison especially with Jehudah Halevi, the great poet and thinker whose personality, disposition, and work more clearly than any of his contemporaries reveal the emotional content and general orientation of a Jewish philosophy of life. What is distinctively Jewish in it, according to the author, is the conception of, and the attitude toward, a divinity who has intertwined himself with the life of his chosen people, its history, its home, its destiny, and given to it a revelation which contains the truth to be gradually unfolded in interpretation and experience. Historically, this has no doubt to a marked extent been characteristic of the Jew. But is it peculiarly Jewish? Essentially the same conception, expressed in various forms, has continued to live even in the great prophetic religions. Humble and devout Christians, Muslims, Mazdayasnians, and Arya Samais as well as Jews have found in it joy and peace, inspiration and strength to struggle for the right. Monotheism has not always been able to break down the barriers between the elect and the non-elect. Nevertheless the moral significance of the ethnically distinct should be recognized. "We need not seek," Mrs. Adlerblum says, "for the Jewish element in Spinoza, Solomon ben Maimon, Ferdinand Lasalle, or Bergson, but only in those philosophers in whom the Jewish past forms an integral part of their philosophizing."

Very interesting is the author's opinion that the animosity against Spinoza was not due to his philosophical ideas, which did not greatly differ from those of Baal Shem Tob, the honored founder of Hasidism, but to the fact that "the contradictions in the Bible became for Spinoza mere contradictions, and not mysterious pointers towards the right solution," and that "he criticizes Maimonides and Gersonides for vitiating the Scriptural meaning by infusing ideas which to them appeared true." But was Spinoza wrong in applying to the ancient Jewish and Christian literature the canons of literary and historical criticism unhesitatingly used in regard to other sacred books? There is no reason for casting any blame on Gersonides for resorting, as he

frequently did, to the allegorical and rationalizing methods in vogue at his time. But can we countenance today methods by which anything may be made to mean anything? True reverence for the past does not require the *sacrificium intellectus*. It is a real service to have called attention afresh to the very extensive freedom of thought Jewish life has permitted and to the great value of distinct contributions rooted in the ancestral soil. This is a brilliant, suggestive, and stimulating study.

NATHANIEL SCHMIDT.

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The Mind. Edited by R. J. S. MCDOWALL. With an Introduction by ERNEST BARKER. New York, Longmans, Green and Company, 1927.—pp. xvi, 315.

Mind and Body. By HANS DRIESCH. Authorized translation by THEODORE BESTERMAN. New York, Lincoln MacVeagh, The Dial Press, 1927.—pp. 191.

The first of these volumes is composed of a series of popular lectures delivered in King's College, London, during the Lent Term of 1927. The lecturers who participated in the course and the fields they represent are: Julian S. Huxley, biology; R. J. S. McDowall, physiology; F. A. P. Aveling, psychology; J. A. Hadfield, psychotherapy; F. A. Lindemann, physics; W. R. Matthews, philosophy; J. Dover Wilson, education; R. G. Collingwood, æsthetic; C. G. Seligmann, anthropology; and L. T. Hobhouse, sociology.

As stated by the Editor in his Preface, the object of the course of lectures was "to give to the public in a concise form a general idea of the mind as viewed from several academic standpoints." This object may be said to have been attained only in the sense in which the "several academic standpoints" are to be held to be identical, or practically so, with the standpoints of the specialists who on this occasion happened to represent them. But, in this sense, the object of the course has on the whole been successfully attained; all of the lectures move with a commendable straightforwardness and are set in a readily intelligible terminology. This is not to say, however, that the lectures all stand on the same level of excellence; those by Professors Huxley, Collingwood, and Hobhouse are outstanding in both form and content, and the latter seems to me especially admirable.

On matters of detail many questions are raised by each lecture in the course, but these cannot here be discussed without extending this notice far beyond the limits of space assigned. I shall content my-

self therefore with two remarks, which seem to concern points of quite basal significance. In the first place, I cannot see how it is logically possible to escape solipsism if one starts with Professor Aveling from private and incommunicable experience as the sole trustworthy foundation for a theory of mind; nor do I see that his argument has in the least surmounted the difficulty. My second remark is that the stage has been reached in discussion of the problem of mind (at least it has long seemed so to me) at which it should be explicitly recognised that, if one is to hold a strictly mechanistic view such as Professor McDowall rather dogmatically advocates, one should at least follow the logic of the view to its bitter end and not play fast and loose with moral and religious 'ideals' either to deceive oneself or to catch the ear of the multitude. Certainly it would seem that the time has arrived when 'mechanistic ideals' should be placed where they belong—and by the mechanists themselves.

The translation of the volume by Driesch corresponds in the main with the second and third edition of *Leib und Seele*. The few changes that have been made are by way of the elimination and addition of a few paragraphs. The purpose of the volume is to bring to bear upon the mind-body problem many of the results of the author's previous works, especially *The Science and Philosophy of the Organism* and *Ordnungslehre*.

The thesis developed is that, as traditionally formulated, the parallelistic theory of the mind-body relation breaks down before an adequate analysis of the facts it is designed to explain, but that the view is on the right track and with certain modifications must be accepted as the only possible solution of the problem. The modifications necessary, however, are for Driesch fundamental and result in a view which he regards as quite significantly different from the classical psychophysical parallelism. According to the traditional view there is a one-one correspondence between body states and mind states; according to Driesch's reformulation of it the correspondence is rather "that between processes in *my mind*, processes in *my psychoid*, and my direct conscious experience" (p. 165). "My mind" is the "continuous basis" of "my self," and by "my self" is to be understood the 'I' who *had* the conscious content—a postulate which is derived from the present conscious content through the instrumentality of its "accent of *before*" (pp. 147, 148). By "my psychoid" is meant the entelechy "so far as this enters into the movements of a human body which are described as 'actions'" (p. 140). Finally, by "my direct conscious experience" is intended the "primary fact, the only com-

pletely indubitable one among all 'facts': *I have consciously something ordered,* or, *I know something (ordered)*" (p. 144).

The question which is constantly before the reader in the constructive part of Driesch's discussion is, on the one side, whether the position is being understood and, on the other side, whether the assumptions that lie at the bottom of it are sound. To be sure, the thesis is stated with directness and there seems little difficulty in grasping its main drift; but the brief exposition given of it (covering only thirty-eight small pages in large type) is hardly sufficient to give the reader great confidence in his interpretation of its meaning. In any event, however, it is clear that the position is based upon the familiar notion of the 'entelechy,' and it stands or falls with this biological concept. As a result of the author's concise formulation of his view its foundation is clearly exposed; and this at least is gain.

Besides the general solution of the mind-body problem here outlined, there are numerous details of analysis of fundamental significance. Of special importance is the analytical survey of the 'elements' of mind, because it directs attention to many aspects of the phenomena of mind which should not be, but too frequently are, overlooked in discussions of the problem of the nature of mind. And the emphasis upon 'order' is a wholesome and fruitful antidote to the sundry atomisms which forget that after all mind is in point of analytical fact systematic. It is to be feared, however, that the helpful principle here noted is forgotten by the author when he comes to the question of *other* minds; there is too much of a tendency exhibited here to lean upon the barren argument from analogy.

The translator has appended to the volume a very valuable bibliography of Driesch's writings. Presumably this is exhaustive, since it has been checked by Driesch himself.

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The Evolution of Values. By C. Bouglé. Translated by Helen Stalker Sellars. New York, Henry Holt & Co., 1926.—pp. xxxvii, 277.

In this thought-provoking and delightfully presented study M. Bouglé stresses the part played by society in the genesis of human values. When consciousnesses come together, novel forces are released, which the individual cannot attain by himself, but with which he is ready to identify himself. From such a fusion of consciousnesses there emerges very early (1) a practical technique, and (2) dominating

religious values which are at once restrictive and exalting, coercive and helpful. And chiefly from these are born the æsthetic and moral values as well as scientific thought.

It follows that values are more than expressions of feeling and desire, even more than permanent possibilities of satisfaction projected by intelligent beings into objects outside themselves. Values are at once social creations and social bonds: principles of unity and continuity and instruments of perpetuation and spiritual regeneration. They are realities in that they offer resistance, cost effort, and impose limitations on inclination and impulse. They exact reverence and present themselves as laws to an individual just because they have in them (as collective emanations) something which the individual did not create. In short, values are objective because of their imperativeness or compelling prestige, and are imperative because collective.

It follows that judgments of value are not mere expressions of momentary personal preference. Although, unlike judgments of reality, they involve a reference to feeling and desire, it is always to the feeling and desire of a being living in society. Judgments of value express tendencies of collective realities and formulate constant relations. That is to say, they are attributive as well as appreciative.

M. Bouglé follows up the general presentation of his thesis with a more detailed account of the social essence of each of the main types of value. Art, for instance, had a social origin in collective enterprises, and by increasing the number of communicable feelings and providing a common set of images and symbols it performs the social function of uniting individuals and groups. The artist is never alone. He craves sympathy, approval, dominion. At the root of art is the need of communion and the idea of communication. Moreover, society furnishes the artist with themes and feelings to express, and conventions which influence technique, while new forms must have a group to defend them if they are to survive and dominate. Similarly, technical and scientific thought were occasioned by and have derived their content, forms, and character largely from collective activities and ideas. Thought is sustained and canalized by a social setting and its evolution is made possible by social creations such as language and influenced by many sorts of social factors. Furthermore, to be motives for action or propulsive forces, the conclusions of the truth-seeker must be fused with enthusiasms and aspirations, that is, with collective feelings. Reason is a desire for harmony by intellectual means; demonstration is socialization. Science unites and thus the truth-seeker works both by and for society.

Such social changes as division of labor, multiplication of groups, and membership in many groups at the same time result in (1) a differentiation of values, and (2) a conjunction of values. On the one hand values become dissociated and the mind comes to judge from different points of view. Morality, art and science become autonomous and are judged by criteria other than social utility. From having been means they attain the status of ends. Nation and super-nation replace religion as the guardian of values, while civilization, representing the universal, rational or human, replaces 'society.' On the other hand values collaborate, making possible toleration and a hierarchy of ends. At the intersections of groupings personalities arise with autonomy and originality, and thereafter the development of the individual is a precious guarantee of the maintenance of the majority of values. Thus the differentiation and conjunction of values give rise to tendencies toward universalization and individualization which in turn call for a re-evaluation of values.

Although M. Bouglé considers collective forces supreme in the genesis of values, he nevertheless recognizes—a bit reluctantly some may think—that there are other factors which must not be overlooked: (1) the properties of things, (2) the nature of the mind, and (3) certain instrumentalities such as the human hand which can scarcely be called social creations.

Mrs. Sellars's excellent translation of M. Bouglé's study and Professor Roy Wood Sellars's stimulating 'Introduction' to the work should not go unmentioned.

RAYMOND P. HAWES.

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Geschichte der Ethik. Die Systeme der Moral vom Altertum bis zur Gegenwart. Dritter Band: Mittelalter bis zur Kirchenreformation. By OTTMAR DITTRICH. Leipzig, Meiner, 1926.—pp. 510.

Professor Dittrich has undertaken a colossal task,—the writing of a comprehensive history of ethics, from its earliest cultural foundations down to the present day. Thus far three large volumes have appeared carrying us through the middle ages to the beginnings of the reformation. Each volume contains one hundred pages of notes and admirable indices, which in themselves will prove of inestimable value to the student. Indeed, they offer us a complete historical dictionary of the entire field of ethical research. The first two volumes appeared in 1923 under the title, *Die Systeme der Moral;* they are now republished under new titles; volume I: *From Antiquity to Hellenism* (pp.

374), volume II: *From Hellenism to the Close of Antiquity* (pp. 311).

The third volume deals with the period before the reformation, beginning with the stage in which the ecclesiastical-cultural element predominates over the secular culture; it is a phase of the middle age which has been much neglected. The last centuries of antiquity bear the mark of Christianity, which had begun as a despised sect of a despised people. It had become a religion at the death of Marcus Aurelius and a union of congregations embracing the whole empire, a church. Its conscious aim was the conquest of the entire world. The emperors of the third century recognized the political danger of this ideal of ecclesiastical world-rule. Constantine in 313 placed it on a basis of equality with the recognized heathen cults; in 380 it was the sole legitimate state church. Paganism was holding its own only in the country districts and among the philosophically educated in the large cities; its philosophical fortress in Athens did not fall until 529. After having gained so much power, the church set up its claim to world-dominion with still greater force, that is, in the West, not in the East, where the head of the state was also the head of the church. It is for this reason that the East, and especially Byzantium, experienced neither a renaissance nor a middle age.

In the West, however, the church seeks to transform the ancient state-church system into a comprehensive church-state polity and thus to guide the entire civilization ecclesiastically. The middle age, therefore, represents the contest between church and state; the ecclesiastical-cultural phase predominates over the secular culture. The church does not cease to dictate to the state and within the state until the end of the Thirty Years' War. It must be remembered, however, that the state-church idea assumes an entirely different meaning on Protestant soil. Luther merely emphasizes that the secular magistracy, as a "prominent member of the church," is justified and obliged to assist the church because of its right of reform. He conceives this assistance merely as a removal of ecclesiastical abuses, as a reform of the cultus, meaning, of course, also, the education and appointment of the clergy, who preach God's word in its purity. No one dreamed of handing over to the ruler the entire ecclesiastical power of the government, including legislation and jurisdiction, in Catholic fashion. But Luther's ideal congregations were never realized. The secular lords adopt the principle *cujus regio, eius religio;* and they create a new Cæsarean papism in the form of territorial ecclesiasticism. In Geneva Calvin establishes a theocratic-democratic community, in which the ecclesiastical community coincides with the political. It immedi-

ately changes into an aristocracy, but it is far from transferring the exercise of the ecclesiastical power to the secular power. Indeed, we have here again the church-state; only that the hierarchical articulation is removed and that the laymen become members of the collegiate organization. And we may say that the absolute political state-church system does not differ from the absolute ecclesiastical state of an Innocent III or a Calvin.

So much for the setting in which medieval thought developed. It is one of the great virtues of Professor Dittrich's work that he studies his subject in its relations to the entire civilization of the times. The largest portion of his third volume (two hundred and sixty-eight pages), however, is devoted to the ethics of scholasticism and mysticism, to "the development of the freedom of religious thinking and feeling,"—the great movement which constitutes the backbone of the middle age,—down to the renaissance and reformation. The work is done with scholarly thoroughness and with such grace of literary style that the reader's interest never flags. And one's appreciation of and respect for the intellectual capacity of the great schoolmen is increased by our author's understanding of their thought.

Another illuminating section of the book is that dealing with the renaissance. Professor Dittrich digs deep down into the roots of the subject, going back to the so-called Adam-speculation or Adam-mysticism of the twelfth century: the conception of Adam as the original type of human nature, a nature, however, that is formed in the image of God. But man fell, owing to original sin, and the necessary consequence was the sovereignty of the imperium: the princes as the executives of the divine providence guaranteed peace and justice. The imperium has as its problem the restoration of man to the lost state of nature and freedom. This thought is expressed in the pseudo-Augustinian *quaestio* concerning Adam and Eve, in which the rebirth of man is defined as "the restoration to the former state of Adam." Here we find the watchwords of the developing renaissance: rebirth, revival, *renasci, renovari, reformari, renascibilitas,* the mystical *ablui* of man. We find here the mystical idea of the divine original man, the first and second Adam (especially Christ): the ideal of the Stoic sage predestined to be the best king, judge, statesman, general, orator, overman, and the degenerate opposite: the tyrant and condottiere.

It is this spirit which prevades the renaissance and humanism: Bonaventura, Dante, Boccaccio, and Rienzi: it continues in the fifteenth century and becomes permanent in the sixteenth. It is fundamentally a 'restoration of nature.' From the very beginning the

movement served to satisfy the desire of the leaders for change, for the transformation of spiritual culture, first of the church and state, and later, overwhelmingly, of literature, art, and the moral life. And we find this spirit in many writings preceding the renaissance. It must be remembered also, that there is a purely pagan current of thought,—in Pletho, Machiavelli, Guicciardini,—besides a purely Christian renaissance in Francis of Assisi and Savonarola. In neither case, however, have we merely a renewal of antiquity: the cry is for the longed-for transvaluation of political, religious, and then of ethical and artistic values.

FRANK THILLY.

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Die sittliche Tat: Ein moralphilosophischer Versuch. With a portrait of the author. By HANS DRIESCH. Emmanuel Reinicke: Leipzig, 1927.—pp. xii, 210.

Der Mensch und die Welt. By HANS DRIESCH. Emmanuel Reinicke; Leipzig, 1928.—pp. xii, 135.

Each of these volumes is in form and content an essay, unified and compact. Each, also, is more a summary of the author's thoughtful convictions than a quest of substantiation, either through argument or evidence. This is as it should be, for in the work of a matured thinker what is most desired is the portrait of his own thought, upon which in the end the reader's judgment must pass. When we add that in both essays Dr. Driesch speaks with an earnestness of reason that elides every suggestion of display and with an eloquence which is beyond rhetoric, it becomes the reader's part, with equal seriousness, to meet him mind to mind. The shadow of the Great War, omnipresent and with unallayed threat, is behind the author as he writes—as how else could it be when his central theme is the conduct of men!—and because with him we share its sense we recognize at once the dramatic propriety and the stringency of purpose of his work. That purpose is to summon men once more to think through their possibilities of self-control and self-direction, for better and for worse, that again they may know themselves, be it as servile or as free.

There is a difference in the two works. *Der Mensch und die Welt* is included in the series 'Metaphysik und Weltanschauung' which is edited by Driesch and Werner Schingnitz and is addressed not to specialists in philosophizing, but to all thinking men. Driesch's own contribution to the series is essentially a summary of his philosophy. Beginning with the native human assumption that there is a world—

the 'natural world,'—he goes on to depict, first, the modes of its comprehension, naïve and critical; in a second part, its constitution, as animate and inanimate, as spiritual, and as expressive in the human modes of religion and art; thence, man as a member of the world, his knowing and willing, his possibilities, the rôle of consciousness; and so, finally, to the concluding image of man as fellow-contender with God upon earth: "Never can we shape upon Earth a kingdom of the pure spirit; but it is given to us to strive after it and at least in fragments to actualize it. And to strip off self-seeking, be it personal or national, is the first requisite." Driesch's philosophy yields us the image of emergent man, contending for his humanity; but the emergence is not of a being within its own physical dimensions, but of a life discovering itself within a permeating world of spirit wherein alone it has reality.

This life in its human, its contending, its self-discovering form is essentially the moral life. This is the theme of *Die sittliche Tat*—to be man is to be moral. "Moral clarity is the highest peak of reason," and "the highest of all technics is the *human*-technic in the service of the Good,"—these are sayings which give the key to Driesch's conception of the fullest illumination of which mind is capable. They represent, however, the conclusion rather than the initials of his exposition. Just as in his treatment of the world-view he begins with our native intuition that we, as men, are in, and in the presence of a world, so here, in the realm of morals, he begins with the moral fact of an intuition of obligation,—though I suppose that 'intuition' is too Latin a word to convey quite precisely that 'Schau' which is the root-word of Driesch's whole metaphysics, designating a knowing which is more akin to sense than to reason and which is subject to the rectifications of the one and the clarifications of the other faculty. At bottom, understanding is neither a construct of sense associations nor a gift of analysis, but it is a conviction (frequently beset) arising spontaneously from the facts of life, as met,—a middle thing, between sense and reason, and more inevitable than either. "Und hier liegen auch, im Nachweis der Schau des *Es sollte sein* als bewussten Urphänomens, die Wurzeln der Ethik." Primarily, Driesch's ethics is intuitive, although the intuition is not of the content of moral action (that is, of definable rights and wrongs), but of modes of moral reaction, and among these the great imperative is the sense of duty. Approximately half of *Die sittliche Tat* is devoted to the doctrine of duty, with heavy stress upon its social and political aspects—intelligible enough considering the political backgrounds of our day. Particularly against

a chauvinistic 'patriotism' are his words earnest and severe: "For what through force, through 'blood and iron' is founded, through force shall be destroyed." Today "men are no more church-pious, nay, in wider circle they are without true religious feeling; but without knowing it, men make use of a substitute therefor, and they have even set gods upon their thrones, and these are named Roma or Germania or Brittania or Gallia. And men mark not the deep blasphemy which here lies concealed." But the moral imperative, "Es sollte sein," looks to another pattern: "There should be only the smallest natural groups and the *one* greatest group, wherein the small groups are conceived not at all as somehow collectively egoistic but only, and self-understandingly, as love-formed communities (Liebesgemeinschaften)." This is Driesch's ideal: a single Humankind, united through its universal discovery of its humanity and the local communities of earth consolidated through those loves betokened by the 'family' and the 'home.'

But what substantiation of thought and event can lead to this bettered world? The two final sections of *Die sittliche Tat* are entitled "Von der Aufklärung" and "Religion als Ziel der Aufklärung"; and it is these sections, more than any others, that will be read with the keenest interest by all who wish to get at the nub of the author's thought. The enlightenment to which Driesch looks is not to be confused with that of the eighteenth century, with its ideal of nature-mechanism, nor yet with its nineteenth century continuation, with its interpretation of human conduct as directed by egoistic impulse and of history as governed by economics. These are distorted and false; the true enlightenment is elsewhere, and its key is the concept of possibility, above all as governed by the ideas, or ideals, of totality and order, which are in the essence of vital and final causes. Only in this enlightenment may the fullness of reason be found: the world is shot through with chance, but chance is fundamentally beyond the grasp of knowing, even though we must recognize its presence. We can grasp only what corresponds to our natures; by nature we are "totality-knowing beings," and we can therefore strictly speaking comprehend naught but totality and knowledge; mechanism, for example, we can recognize in its plane, but we cannot truly grasp it. The roots of all genuine *reason* lie here—in *Ganzheit*-measured knowing; and it is on such ground that Driesch regards his own view as rationalistic: "We may call all genuine enlightenment tuition in rationalism, where that rationalism is itself genuine; and this genuine rationalism apprehends the formal being of the world in its integral

unity and at the same time recognizes its own limitations." And inferentially the truly enlightened "*Realpolitiker*" is precisely one who recognizes what is empirically possible just because he has attained an understanding of the like spiritual being of all men. Further, he will legislate, not venerating the past just for its age nor valuing the future for the sake of *heirs* whom he may generate, but rather for the generation of *fathers and mothers* who with clear gaze shall look into a future rich in understanding and in moral insight.

"The highest form of enlightenment is enlightenment unto religion"; indeed, "religion is the last end of all enlightenment." This is the conception introducing Driesch's final discussion. "Religion (*Religiosität*) is a feeling, which like every feeling, is a conscious expression of a state of the unconscious soul . . . *the* feeling of submissive, joyous rest in the consciousness of a perfectly dependent protected being." The kernel of this feeling rests upon a certain belief-content, a faith, which, metaphysically viewed, falls within the frame of a consecration of 'mine' as a psychophysical person in the totality and development of the world. Further, the end of this development is neither an earthly nor a social perfection; it implies some kind of immortality, some *Geistesmetaphysik*, for it is this alone that can justify ethical insight. This is not, however, to proclaim it aside from reason: to be human means to understand laws and to utilize these laws in the service of moral advancement. The truly enlightened man, he who strives after perfection, such an one can but love, and never hate, feel compassion, and never yield to sharp reproof. For man himself has not created either his understanding or his sympathy; these are given to him by the Greatest and Highest, in the midst of which he is only a point; and even this he knows. He knows also that all earthly being is only a likeness, a dualistically distorted copy of an archetype within another world, to which he, in his genuine being, belongs. Within this earthly world he abides, but as a knowing and moral subject. He may, as ascetic, seek to escape it; or he may ally himself with its conduct in the sense of willing good actions; and to this nothing helps so much, nothing so strengthens his soul, as religion. This is empiric.

But should this religion be of the church? Driesch recognizes in Catholic Christendom and in Bhuddist religious doctrine—each not far from neo-Platonism—the two bodies of metaphysical thought which justify the ecclesia: these two at least rest upon the unity of the human spirit, and are in this sense of the word fundamentally Christian. 'State' churches are not so, but rather in many cases have

broken the way for an antichristianity; while the liberal Protestant communities are in no strict sense churches. Nor is a new church possible: the day of revelation, of the non-natural, is past; and the church rests its case on revelation. Indeed, all that is meant by the conception of the non-natural in its application to revelation and priestly endowment is only and solely an untestable wonder, harking back to the free will of God; and this a man may feel and own without the church. Men confound '*Christentum*' with 'civilization,' but this is delusion; in strict sense, Christianity is "a dogmatic magical church teaching." In the end, adherence to the church or rejection of it is a matter of the man's own spiritual advantage.

Comes the codicil to Driesch's essay. The final gift of enlightenment is understanding of the meaning of dualism and of the road to its overcoming. Dualism signifies the mixture in the world of totality (*Ganzheit*) and non-totality (*Nichtganzheit*); which is indeed the foundation of possibility, and therefore of ethics, given instinctively in "*Es sollte sein.*" Practical ethics has, in last analysis, only for its object the conquest of this dualism. Not that this is wholly attainable. Driesch rests his case with a meliorism. The world can be battered through human effort, and the inspiration of this effort is the recognition that man, as a living being (not mechanical body), possesses the attributes of life because his living nature is in fact construed from the substance of the spiritual, not out of the mechanical dimension of experience. As he puts it in *Der Mensch und die Welt*, what man was ere he lived and what he is to be when he no longer lives, we know not: to 'live' means only that he is a whole and knowing being bound in matter. This is his misfortune in that matter hems in his freedom, of thought, of action, of moral achievement; but it is his fortune, also, in that it is through material means that he is enabled to strive and to know, and to better his world.

Such, in outline, is the argument of the two essays—the net consequence of the author's reflective life. In substance it is brave and fine. Driesch is right in his insistence upon the immediacy and validity of the moral intuition, as fact; and he is certainly also right in maintaining that reason itself falls away when the moral is not made not merely its sequel but its foundation; he is right again in asserting that obligation, and the possibility which gives obligation reality are first in the order of understanding, and that their meaning is human freedom to achieve humanity. He is courageous and telling when he castigates the theoretical pretensions of chauvinistic politics, and his courage is yet higher when he sets against our metaphysical ignorance

the certitude of some spiritual insight, even in a dualistic and motlied world. All these are tokens of enfranchisement.

But of Christianity, is his interpretation quite penetrating? One would say, I think, without hesitancy that the background of the author's thought is colored and shaped by the Protestant faith: he has all its reliances excepting the call for congregational expression; most of all, the illumination which he finds is that inner and convincing testament upon which Protestantism rests its case. Whether churched or not, the author is assuredly christian in this most central sense, to wit: that *the truth which finds an image in the church* is his. . . . Of the other, the metaphysical doctrine that the world's dualism resolves into the contending pressure of a living, a spiritual totality upon a material and mechanical non-totality, of this, I as reader cannot readily be convinced. Is *all* spirit *one* entelechy—how be certain? The demand for unity has always seemed to me, in the end, a surrender, both of the reason and of the imagination. Driesch, I gather, finds in his *Ganzheit* a compensation for the deformed and life-alien 'world' which natural science gives. But it may be that of all truths that deal with nature the least 'natural' is this science.

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The following books have also been received:

The Humanity of God. By John Wright Buckham, D.D. New York, Harpers, 1928.—pp. xiv, 265.

The Decline of the West: 2 vols.; vol. 1, *Form and Actuality;* vol. 2, *Perspectives of World-History.* By Oswald Spengler, translated by Charles Francis Atkinson. New York, Knopf, 1928.—pp. (vol. 1) xviii, 428, xxxi; (vol. 2) xi, 507, xxxiii.

Mind, Matter and Purpose: Aristotelian Society, Supplementary Volume VIII. London, Harrison, 1928.—pp. 221.

Alfarabi's Philosophy and its Influence on Scholasticism. By Fr. Robert Hamui, O.F.M. Sydney, Pellegrini, 1928.—pp. 86.

What is Life? By Augusta Gaskell. Springfield, Illinois, Thomas, 1928. —pp. 324.

Fundamental Problems of Life. By J. S. Mackenzie. New York, Macmillan, 1928.—pp. 384.

The Neo-Platonists. By Thomas Whittaker. Second edition reprinted. Cambridge, England, The University Press, 1928.—pp. xv, 318.

The Nature of the Physical World. By A. S. Eddington. New York, Macmillan, 1928.—pp. xvii, 361.

Religion without God. By Fulton J. Sheen. New York, Longmans, Green, 1928.—pp. xiv, 368.

The "Soul" of the Primitive. By LUCIEN LÉVY-BRUHL. Translated by LILIAN A. CLARE. New York, Macmillan, 1928.—pp. 351.

Duty and Interest. By H. A. PRICHARD. Oxford, The Clarendon Press, 1928.—pp. 44.

Platonism. By JOHN BURNET. Berkeley, California; University of California Press, 1928.—pp. 130.

The Philosophical Bases of Education. By ROBERT R. RUSK. Boston, Houghton Mifflin (no date).—pp. 205.

The Theory of Morals. By E. F. CARRITT. New York, Oxford University Press, American Branch, 1928.—pp. xii, 144.

What is the Mind? By GEORGE F. PATRICK. New York, Macmillan, 1929.—pp. viii, 185.

The Growth of Philosophic Radicalism. By ÉLIE HALÉVY. Translated by MARY MORRIS. New York, Macmillan, 1928.—pp. xvii, 554.

The Interpretation of Religion. By JOHN BAILLIE. New York, Scribners, 1928.—pp. xv, 477.

A Commentary on Plato's Timaeus. By A. E. TAYLOR. Oxford, The Clarendon Press, 1928.—pp. xvi, 700.

An Anthology of Recent Philosophy. By DANIEL SOMMER ROBINSON. New York, Crowell, 1929.—pp. xi, 674.

Du Protestantisme. Par WILFRED MONOD. Paris, Alcan, 1928.—pp. 272.

Les Puissances de l'Abstraction. Par FRÉDÉRIC PAULHAN. Paris, Nouvelle Revue Française, 1928.—pp. 313.

Les Origines humaines et l'Évolution de l'Intelligence. Par ÉDOUARD LE ROY. Paris, Boivin.—pp. v, 371.

Aristoteles' Gedanke der Philosophie. Von KURT SCHILLING-WOLLNY. Munich, Reinhardt, 1928.—pp. 133.

Die geistige Ermüdung. Von MAX OFFNER. Zweite, vermehrte, und umgearbeitete Auflage. Berlin, Reuther und Reichard, 1928.—pp. viii, 180.

Die Apperzeption. Von DR. AUGUST MESSER. Dritte, verbesserte Auflage. Berlin, Reuther und Reichard, 1928.—pp. iv, 150.

Schelling und die romantische Schule. Von HINRICH KNITTERMEYER. Munich, Reinhardt, 1929.—pp. 482.

Die Rechtsphilosophie des Pessimismus. Von K. O. PETRASCHEK. Munich, Reinhardt, 1929.—pp. xix, 421.

Allgemeine Ontologie der Wirklichkeit. Zweiter Band, erste und zweite Lieferungen. Von GÜNTHER JACOBY. Halle, Niemeyer, 1928.—pp. 320.

Jahrbuch für Philosophie und phänomenologische Forschung, Band IX. Halle, Niemeyer, 1928.—pp. x, 498.

Wandlungen der Weltanschauung, Lieferung 4. Von KARL JOËL. Tübingen, Mohr, 1928.—pp. 481–735 and i–xiv.

Metaphysik. Von MAX WENTSCHER. Berlin, De Gruyter, 1928.—pp. 165.

Die absolute Zeit in der Relativitätstheorie. Von FRANZ SANDGATHE. Berlin, Heymanns, 1928.—pp. 132.

David Hume, Leben und Philosophie. Von RUDOLPH METZ. Stuttgart, Frommanns, 1929.—pp. xii, 405.

Der Platonismus bei Clemens Alexandrinus. Von JOACHIM MEIFORT. Tübingen, Mohr, 1928.—pp. 93.

Geschichte der jüdischen Philosophie des Mittelalters, Zweiter Band, 2. Von DAVID NEUMARK. Berlin, de Gruyter, 1928.—pp. xx, 371.

Introduzione alla Filosofia. By FRANCESCO DE SARLO. Milan, Società editrice Dante Alighieri, 1928.—pp. 584.

NOTES.

The PHILOSOPHICAL UNION of the University of California announces a series of eight lectures to be given during the Spring Semester on THE NATURE OF TRUTH:

I. Friday, February 15, 1929.
The Propositional Nature of Truth.
Professor J. LOEWENBERG.

II. Friday, March 1, 1929.
Truths of Existence and of Meaning.
Professor G. P. ADAMS.

III. Friday, March 8, 1929.
A Pragmatic Theory of Truth.
Professor GEORGE H. MEAD.

IV. Friday, March 15, 1929.
The Nature of Scientific Truth.
Professor V. F. LENZEN.

V. Friday, March 29, 1929.
Truth in Transformation.
Professor D. S. MACKAY.

VI. Friday, April 5, 1929.
Truth and Perception.
Professor W. R. DENNES.

VII. Friday, April 12, 1929.
Propositions and Facts.
Doctor PAUL MARHENKE.

VIII. Friday, April 19, 1929.
The Inaccessibility of Truth.
Professor D. W. PRALL.

Professor George H. Mead, of the University of Chicago, has been elected by the Carus Lecture Committee to deliver the third series of the Paul Carus Lectures. The first series was delivered by Professor John Dewey, of Columbia University, and the second by Professor Arthur O. Lovejoy, of the Johns Hopkins University.

Determination of the details with respect to the time and place of the next series of lectures has been delegated with power to a committee of three consisting of the President of the Pacific Division of the American Philosophical Association (acting as chairman), the Carus lecturer, and a representative of the Department of Philosophy, University of California at Berkeley, to be selected by the Department.

Dr. Albert Lefevre, Corcoran Professor of Philosophy at the University of Virginia, died on Dec. 18, 1928.

The following is a list of articles in current philosophical periodicals:

THE INTERNATIONAL JOURNAL OF ETHICS, XXXIX, 2: *Frank H. Knight*, Freedom as Fact and Criterion; *G. Watts Cunningham*, Emergence and Intelligibility; *E. Torday*, The Morality of African Races; *Percy Holmes Boynton*, Emerson in his Period; *M. C. Otto*, What is Man?; *Valmai Burdwood Evans*, The Ethics of Giovanni Gentile; *William F. Clarke*, The Significance of William Blake in Modern Thought.

THE NEW SCHOLASTICISM, III, 1: *George Lacombe*, The *Questions* of Cardinal Stephen Langton; *Peter J. Bart*, Reflections on Perception; *Martin Grabmann*, The Influence of Mediæval Philosophy on the Intellectual Life of To-day; *Charles C. Miltner*, "Self-realization" in Ethics; *M.-D. Chenu*, Chronicle: Pour l'Histoire de la philosophie médiévale.

THE HARVARD THEOLOGICAL REVIEW, XXI, 4: *Kirsopp Lake, Robert P. Blake*, and *Silva New*, The Cæsarean Text of the Gospel of Mark.

THE JOURNAL OF PHILOSOPHY, XXV, 23: *John B. Kent*, The Status of the Data of Experience; *Charles M. Perry*, Purpose in the Doctrine of Contradiction; 24, *Herman Hausheer*, A Theory of Perception; *Homer H. Dubs*, On the Relation of Appearances to Real Things; 25, *Irwin Edman*, Religion and the Philosophical Imagination; *Frederick T. E. Woodbridge*, Substance; *Leo Stein*, Concrete and General in Art Criticism; XXVI, 1, *Horace L. Friess*, Wilhelm Dilthey; 2, *Orland O. Norris*, A Behaviorist Account of Intelligence.

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY, VI, 3: *John Anderson*, Determinism and Ethics; *F. E. Brown*, Christianity: The Religion of Jesus of Nazareth; *C. I. McLaren*, An Hypothesis concerning the Relation between Body and Mind; *Marguerite W. Crookes*, Vitalism; *T. Jasper*, A Plea for an Unnatural Morality; *Richard Lawson*, New Wine in Old Bottles.

THE BRITISH JOURNAL OF PSYCHOLOGY, XIX, 2: *G. G. Brown*, Perception of Depth with Disoriented Vision; *Ragnar Granit*, On Inhibition in the After-Effect of Seen Movement; *Lewis F. Richardson*, Thresholds when Sensation is regarded as Quantitative; *Otis C. Trimble*, A Discrete Impulse Technique in Sound Localization; *John Wishart*, Sampling Errors in the Theory of Two Factors; *John L. Hardie*, Spearman's *Measure of 'Intelligence'*; a Statistical Analysis.

THE PSYCHOLOGICAL REVIEW, XXXV, 6: *Samuel W. Fernberger*, Statistical Analyses of the Members and Associates of the American Psychological Association, Inc. in 1928; *Ernest Glen Wever* and *Karl Edward Zener*, The Method of Absolute Judgment in Psychophysics; *J. P. Guilford*, The Method of Paired Comparisons as a Psychometric Method; *Alfred R. Root*, Auditory Persistence, Summation and Fusion in Successive Impulse Periods; *Otis C. Trimble*, The Theory of Sound Localization; A Re-Statement.

THE JOURNAL OF EXPERIMENTAL PSYCHOLOGY, XI, 6: *Paul Thomas Young,* Auditory Localization with Acoustical Transposition of the Ears; *Loh Seng Tsai* and *Ethel Abernethy,* The Psychology of Chinese Characters; *Charles W. Bray,* Transfer of Learning; *Harold Schlosberg,* A Study of the Conditioned Patellar Reflex; *Mandel Sherman,* Emotional Character of the Singing Voice.

THE PSYCHOLOGICAL BULLETIN, XXV, 11: *B. T. Baldwin,* Review of the Recent Work in Child Psychology; 12, *A. Cronbach,* Bibliographical Survey of Recent Work in the Psychology of Religion; *A. R. Chandler,* Recent Experiments on Visual Æsthetics.

REVUE PHILOSOPHIQUE, LIII, 11 and 12: *Destutt de Tracy* et *Maine de Biran,* Correspondance (fin); *L. Bosso,* La technique et sa philosophie; *J.-H. Luquet,* Principaux types logiques de démonstration mathématique; *P. Masson-Oursel,* Les traits essentiels de la psychologie indienne; *J. Nogué* Dissertation sur la relativité de la vision.

BULLETIN DE LA SOCIÉTÉ FRANCAISE DE PHILOSOPHIE, XXVII, 5: Discussion de la Coopération de consommation.

KANT-STUDIEN, XXXIII, ¾: *Paul Menzer,* Erich Adickes †; *Kurt Riezler,* Die physikalische Kausalität und der Wirklichkeitsbegriff; *Hugo Bergmann;* Über einige philosophische Argumente gegen die Relativitätstheorie; *Karl Bühler,* Die Symbolik der Sprache; *Paul Häberlin,* Das ästhetische und das moralische Leben; *Ludwig Goldstein,* Kant's Sommerfrische.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE UND SOZIOLOGIE, XXXI, 3 und 4: *Samuel Atlas,* Zur erkenntnistheoretischen Grundlegung der Geschichte; *Arthur F. Bentley,* A Sociological Critique of Behaviorism; *Vasili Gherasim,* Von den Grundlagen der rumänischen Philosophie; *Thomas Givanovitch,* Die systematische Einordnung der philosophischen Lehren und die Konstruktion der zweiartigen synthetischen Philosophie; *Otto Kröger,* Reiner Idealismus und empirische Weltansicht; *J. Metallmann,* Von den Prinzipien der Naturgesetzlichkeit; *B. Petronievics,* L'espace discret et la géométrie non-euclidienne; *Trajan Bräileanu,* Soziologie und Politik; *H. L. Stoltenberg,* Sozionoologie und Noosoziologie oder Gruppgeistwissenschaft und Geistgruppwissenschaft.

ZEITSCHRIFT FÜR PSYCHOLOGIE, CVIII, 5 u. 6: *Karl Groos,* Die "Stimme des Gewissens"; *D. Katz* und *K. v. Götzen,* Über ein Perkussionsphantom; *Joseph Petzoldt,* Komplex und Begriff, III; *Bruno Petermann,* Über die Idee einer objektiven Psychologie; *Heinrich König,* Über das musikalische Gedachtnis; *Gustav Ichheiser,* Die Erforschung des Seelenlebens als Aufgabe und das Problem der "Täuschung"; CIX, 1 bis 4: *Oswald Kroh,* Vergleichende Untersuchungen zur Psychologie der optischen Wahrnehmungsvorgänge; *V. Robert Scholl,* Die teilinhaltliche Beachtung von Form, Farbe und Grösse im vorschulpflichtigen Kindesalter; *Egon Brunswik,* Zur Entwicklung der Albedowahrnehmung; *Otto Selz,* Experimentelle Untersuchungen über den natürlichen Lernvorgang. I, *Albin Hermann,* Über die Fähigkeit zu selbständigem Lernen und die natürlichen Lernweisen zur

Zeit der Volksschulreife. II, *Otto Selz*, Über die Abhängigkeitsbeziehungen zwischen Lernlust und Lernerfolg; *Julius Pikler*, Beobachtungen bei verschlossenen Ohren und Folgerungen aus denselben; *Stefan Baley*, Mitteilung zum Problem der Gestaltauffassung bei Kindern; *Othmar Sterzinger*, Verhalten und Umstimmungen der Stubenfliege bei Gewitter.

RIVISTA DI FILOSOFIA, XIX, 4: *G. Rensi*, La Morte dell' Eros; *G. Grasselli*, La Fenomenologia di Husserl e l'Ontologia di Martin Heidegger; *C. Goretti*, L'animale quale soggetto di diritto.

LOGOS, XI, 3: *N. Abbagnano*, La filosofia di E Meyerson e la logica dell' identità; *E. Catalano*, Lo spirito, la natura e l'educazione; *E. di Carlo*, Nuove ricerche bibliografiche intorno a P. Galuppi; *G. Capone-Braga*, La dottrina plotiniana delle idee individuali.

GIORNALE CRITICO DELLA FILOSOFIA ITALIANA, IX, 5: *Anacleta Candida Vezzetti*, Giorgio Santayana e i suoi "Dialoghi nel Limbo"; *Andrea Ferro*, Verità e realtà secondo H. Maier (fine); *Luigi Volpicelli*, Corteggio Buzzetti—Lamennais.

LEVANA, VII, 4: *A. Banfi*, La dottrina pestalozziana; *Augusto Guzzo*, Ancora dell' insegnamento della Filosofia nei Licei; *Gianni Gervasoni*, La Riforma Scolastica della Repubblica Cisalpina; *Alberto Gianola*, Il tormento del latino; *G. Savini*, Gli scopi dell' insegnamento religioso nella Scuola Media.